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PART FIRST.

Original Communications.

ART. I.—*Original Communications from William H. Prescott and Washington Irving, Esqs., relative to the American Origin of Syphilis; with additional Remarks descriptive of an Epidemic Disease, termed Matlazahuatl, which, prevailing among the Native Mexicans, has been supposed to be analogous to the Yellow Fever; and also descriptive of the fact, that the Prophylactic Power of the Vaccine Virus was known in the Peruvian Andes, before the era of Jenner.* By the EDITOR.

ALTHOUGH the question, whether Syphilis existed in the West Indies and on the continent of America at the period of their discovery by the Spaniards, is, by the profession in this country, very generally decided in the negative; yet, in order effectually to remove all remaining doubts, and to efface completely the stigma thus cast upon the New World by the Old, at a time when, in Europe, the opinion that the human species, and indeed the whole animal kingdom, in America, had become entirely *degenerated*, we will here present the evidence of two of the most accomplished and distinguished historians of modern times. Peculiarly qualified for this decision by the nature of their literary pursuits, it will suffice to say that the one is the author of "The Life and Voyages of Columbus," and the other, of "Ferdinand and Isabella," and more recently, "The History of the Conquest of Mexico." After this testimony shall have been presented to the world, this long-mooted question must be considered as conclusively put to rest, and never more to be revived.

The following letter is addressed by Mr. Prescott to Alexander E. Hosack, M.D.

"*Boston, January* 22d, 1844.

"My dear Sir,—I have received your note of the last week, inquiring whether in my researches relative to the History of Mexico, I had met with any trace of the existence of the Venereal disease among the Aborigines previous to the coming of the Spaniards. I observe, also, that you remark, that Dr. Forry had already put the same question in a letter addressed to me some time

since. I assure you that I never received that letter. If I had, I should have answered it with the sincere pleasure and promptness with which I now reply to yours.

"In a note in the 'History of Ferdinand and Isabella,' vol. ii., p. 501, I took occasion to express my own conviction, that the Venereal disease did not exist among the natives of America at the time of its discovery. I had met with no allusion to it in the narratives of Columbus or his son Ferdinand, or in any other record of the Spanish adventures.

"I have been led into a much wider range of observation in preparing the 'History of the Conquest of Mexico.' But it has served to confirm my former opinion, since I have never met with a notice of this disease, or of any which resembles it. The ancient chronicles speak of an Indian epidemic, called the *Matlazahuatl*, which swept off great numbers of the natives both before and after the Conquest, and which seems to have had some resemblance to the yellow fever. They also notice the introduction of the small-pox by a black, who came into the country the year after the arrival of Cortés. The Spaniards would certainly not have omitted to notice so terrible a disorder as the Venereal, had it been found among the natives: especially, as considering their own licentious indulgence, it must have fallen very heavily on themselves. Their uniform silence, therefore, is evidence so strong, that it may be called positive, rather than negative, and may be considered as establishing the fact, that the disease was not known in the Mexican empire, at the time of its discovery. Whether a disease so easily propagated among adjacent tribes, and which seems to be circumscribed by no parallel of latitude, could have existed in other parts of the Continent without finding its way into Mexico, is a question which your own knowledge of the subject will enable you to determine better than I can.

"Believe me, my dear sir, very truly yours,

"Wm. H. Prescott.

"Alex. E. Hosack, Esq."

The following extract from "Ferdinand and Isabella," gives the paragraphs referred to above by Mr. Prescott:

"While the colonial commerce failed to produce immediately the splendid returns which were expected, it was generally believed to have introduced a physical evil into Europe, which, in the language of an eminent writer, 'more than counterbalanced all the benefits that resulted from the discovery of the New World.' I allude to the loathsome disease which Heaven has sent as the severest scourge of licentious intercourse between the sexes; and which broke out with all the virulence of an epidemic in almost every quarter of Europe, in a very short time after the discovery of America. The coincidence of these two events led to the popular belief of their connection with each other, though it derived little support from any other circumstance. The expedition of Charles the Eighth against Naples, which brought the Spaniards, soon after, in immediate contact with the various nations of Christendom, suggested a plausible medium for the rapid communication of the disorder; and this theory of its origin and transmission, gaining credit with time, which made it more difficult to be refuted, has passed with little examination from the mouth of one historian to another to the present day.

"The extremely brief interval which elapsed, between the return of Columbus and the simultaneous appearance of the disorder at the most distant points of Europe, long since suggested a reasonable distrust of the correctness of the hypothesis; and an American naturally desirous of relieving his own country from so melancholy a reproach, may feel satisfaction that the more searching and judicious criticism of our own day has at length established beyond a doubt that the disease, far from originating in the New World, was never known there till introduced by Europeans."*

* "The curious reader is particularly referred to a late work, entitled *Lettere sulla Storia de' Mali Venerei, di Domenico Thiene, Venezia,* 1823; for the knowledge and

On learning the miscarriage of our first letter, we addressed Mr. Prescott a second time, suggesting several inquiries; and to this, we promptly received the following:

"*Boston, January* 27th, 1844.

"My dear Sir,—I am much obliged to you for calling my attention to Oviedo's

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loan of which I am indebted to my friend, Dr. Walter Channing. In this work, the author has assembled all the early notices of the disease of any authority, and discussed their import with great integrity and judgment. The following positions may be considered as established by his researches. 1. That neither Columbus nor his son, in their copious narratives and correspondence, allude in any way to the existence of such a disease in the New World. I must add, that an examination of the original documents published by Navarrete since the date of Dr. Thiene's work, fully confirms this statement. 2. That among the frequent notices of the disease, during the twenty-five years immediately following the discovery of America, there is not a single intimation of its having been brought from that country; but, on the contrary, a uniform derivation of it from some other source, generally France. 3. That the disorder was known and substantially described previous to the expedition of Charles VIII., and, of course, could not have been introduced by the Spaniards in that way, as vulgarly supposed. 4. That various contemporary authors trace its existence in a variety of countries, as far back as 1493, and the beginning of 1494, showing a rapidity and extent of diffusion perfectly irreconcilable with its importation by Columbus in 1493. 5. Lastly, that it was not till after the close of Ferdinand and Isabella's reigns, that the first work appeared affecting to trace the origin of the disease to America; and this, published in 1517, was the production not of a Spaniard, but a foreigner.

"A letter of Peter Martyr to the learned Portuguese Arios Barbosa, professor of Greek at Salamanca, noticing the symptoms of the disease in the most unequivocal manner, will settle at once this much-vexed question, if we can rely on the genuineness of the date, the 5th of April, 1488, about five years before the return of Columbus. Dr. Thiene, however, rejects the date as apocryphal, on the ground, 1. That the name of 'morbus Gallicus,' given to the disease by Martyr, was not in use till after the French invasion, in 1494. 2. That the superscription of Greek professor at Salamanca was premature, as no such professorship existed there till 1508.

"As to the first of these objections, it may be remarked, that there is but one author prior to the French invasion, who notices the disease at all. He derives it from Gaul, though not giving it the technical appellation of *morbus Gallicus*; and Martyr, it may be observed, far from confining himself to this, alludes to one or two other names, showing that its title was then quite undetermined. In regard to the second objection, Dr. Thiene does not cite his authority for limiting the introduction of Greek at Salamanca to 1508. He may have found a plausible one in the account of that university compiled by one of its officers, Pedro Chacon, in 1569, inserted in the eighteenth volume of the Semanario Erudito (Madrid, 1789). The accuracy of the writer's chronology, however, may well be doubted from a gross anachronism on the same page with the date referred to, where he speaks of Queen Joanna, as inheriting the crown in 1512. (Hist. de la Universidad de Salamanca, p. 55.) Waving this, however, the fact of Barbosa being Greek professor at Salamanca in 1488 is directly intimated by his pupil, the celebrated Andrew Resendi. 'Arios Lusitanus,' says he, 'quadraginta, et eo plus annos Salmanticæ tum Latinas litteras, tum Græcas, magnâ cum laude professus est.' (Responsio ad Quevedum, apud Barbosa, Bibliotheca Lusitana, tom. i., p. 77.) Now as Barbosa, by general consent, passed several years in his native country, Portugal, before his death in 1530, this assertion of Resendi necessarily places him at Salamanca in the situation of Greek instructor some time before the date of Martyr's letter. It may be added, indeed, that Nic. Antonio, than whom a more competent critic could not be found, so far from suspecting the date of the letter, cites it as settling the period when Barbosa filled the Greek chair at Salamanca. (See Bibliotheca Nova, tom. i., p 170.)

"Martyr's epistle, if we admit the genuineness of the date, must dispose at once of the whole question of the American origin of the venereal disease. But as this question is determined quite as conclusively, though not so summarily, by the accumulated evidence from other sources, the reader will probably think the matter not worth so much discussion."

writings, as it enables me to correct any wrong impressions which might arise from my remarks on the Venereal disease in my note to Dr. Hosack. The works of Oviedo to which I suppose you refer, are his *Sumario*, as it is called, and his *Historia General de las Indias*; the first of which was originally published in 1526, and the last in 1535. The former work is devoted to the geography, natural productions, and some mention of the races who inhabited the Islands. The latter work embraces the same topics in a more expanded form, with an additional account of the reduction of the Islands by the Spaniards. I had read parts of both, especially the parts in the latter relating to the occupation of the country. But as the natural products and climate, &c., of the islands were foreign to my subject, I passed rapidly over them.

"Oviedo, in the cap. 77, of the *Sumario*, speaks of a tree called by the natives *Guaiacan*, or *Palo Santo*. In his second work on the Indies, he corrects an error by stating that, although very similar in their virtues, they are distinct trees. The wood of these trees, he says, when boiled in pure water, makes a decoction of marvellous efficacy in curing the Venereal disease, or as he calls it, the '*disease of the buboes*,' *el mal de las bubas*. He goes on to state that 'there is no doubt this disease came from the Indies, and that it is very common among the natives, though not so dangerous there as in Europe, since the Indians cure the disorder without much difficulty by means of the decoction above-mentioned;' and on 'Tierra-firme,' he adds, 'the natives overcome it, in like manner, by an infusion prepared from certain herbs.' He then states, that the first time that the disease was seen in Spain, was after the return of Columbus, when several of his followers imported it into the country; and on the expedition to Naples against Charles VIII., in 1495, it was communicated to the French troops, and then, after rapidly spreading over Christendom, passed into Africa. The French called the disease the *mal de Napoles*, and the Italians called it the *mal Francisa*. Thus far Oviedo. The latter name soon became the popular one, perhaps because the Italians of that day, being proficients in medical science, made it known by their writings, while the French were probably equally active in making it known by their gallantries.

"This is the vulgar history of the disorder which obtained credit very early; founded, I suppose, on this statement of Oviedo. This writer, however, cannot be implicitly followed. This may be said without impeachment of his integrity, and without adopting the wholesale denunciation of the good, but prejudiced Las Casas, that 'his works are as full of lies as of pages.' He collected his information from all, including the most doubtful sources, and in his eagerness to add to the stores of natural science, was not sufficiently discriminating. His first account was not written till thirty-four years after the discovery of America, the distance of a generation. And it seems not improbable, as it is unsupported by the testimony of others contemporary with the discovery, that he should have described a disease originally introduced by the Spaniards, but for which the natives, skilful in detecting the medicinal virtues of their own plants, were quick to find a remedy; a remedy greatly facilitated in its operation by the mild character of the climate.

"Now that I turn my attention to this particular topic, I find the disease noticed by another contemporary of the Conquest, Gomara, the chaplain of Cortés. It is in the twenty-ninth chapter of his *Historia de las Indias*, a work which I have hardly had occasion to examine for the history of the Conquest of Mexico. In his description of the island of Hispaniola, he gives the same account of the venereal *bubas* as that found in Oviedo, although he cites as his authorities, a medical writer, Joannes de Vigo, and an historian, Antonio Sabelico. Gomara was never in the West Indies, and as he wrote this as late as 1553, his testimony, second-hand moreover as it is, gives little additional weight to Oviedo's.

"With respect to the Indian disease of the *Matlazahuatl*, the most complete and copious account is to be found in Humboldt's *Nouvelle Espagne*, tom. i., p. 333, and iv., p. 162, 2d edition. I will take the liberty to refer you to his philosophic pages, as the work is, I believe, very accessible, and doubtless you will prefer the original to a bald translation of mine.

"In conclusion, I must thank you for the number of your Journal which you were so kind as to send me. Had I ever received it or your letter, I should not have neglected to reply to you.

"With great respect, I am, my dear sir,

"Your obedient servant,

"SAMUEL FORRY, Esq." "WM. H. PRESCOTT.

Confirmatory of these views, we will now give the additional evidence of Washington Irving, Esq., whose researches relative to the early discoverers of America, must, as in the case of Mr. Prescott, have made him acquainted with many circumstances not accessible to the public; and which, as regards the unsettled question in the history of medicine here presented, may afford a satisfactory solution. For this correspondence, we are indebted to the kindness of John Watson, M.D.

"*New York, Feb.* 1, 1844.

"Dear Sir,—I mentioned to you some months ago, in speaking on the history of the Venereal disease, that I have formerly had the subject under consideration; and that I had a promise from Washington Irving, Esq., to pursue the inquiry as to the American origin of this disease, among the original documents of Columbus and his companions. Since then, I have ascertained nothing further on the subject; but as you express a wish to be possessed of our correspondence, I herewith send you a copy of it.

"Yours, &c.,

"DR. S. FORRY." "JNO. WATSON.

Leaving out Dr. W.'s letter to Mr. Irving, we here present the note of the latter, written just on the point of his departure as Minister to Spain:

"*New York, March* 22, 1842.

"Dear Sir,—In the hurry of various occupations preparatory to my departure, I find that I have your note of March 12th lying unanswered. I have not now time to refer to papers and documents to refresh my memory on the subject of your inquiry. I recollect, however, that my impression was, while writing the History of Columbus, that the disease you mention did not exist among the natives of America at the time of the discovery, nor among the voyagers during the first voyages; but that it originated in Europe. When I have leisure, I will look into the matter in Madrid; and should I discover any facts upon the subject, I will communicate them to you.

"Very respectfully, &c.,

"DR. JNO. WATSON." "WASHINGTON IRVING.

In reference to the Indian epidemic, termed *matlazahuatl*, adverted to above by Mr. Prescott, we will here present the following description by Humboldt, as given in his "*Essai Politique sur le Royaume de la Nouvelle-Espagne*:"

"Le *matlazahuatl*, maladie particulière à la race Indienne, ne paroît presque se montrer que de siècle en siècle; il a surtout sévi en 1545, en 1576 et en 1736: les auteurs Espagnols le nomment une peste. L'épidémie la plus récente ayant eu lieu à une époque où, dans la capitale même, la médecine n'étoit pas considérée comme une science, nous manquons de renseignemens exacts sur le *matlazahuatl*. Il a sans doute quelque analogie avec la fièvre jaune ou avec le vomissement noir; mais il n'attaque pas les hommes blancs, soit Européens, soit descendans des indigènes. Les individus de la race du Caucase ne paroissent pas exposés à ce typhus mortel, tandis que, d'un autre côté, la fièvre jaune ou le vomissement noir n'attaque que très-rarement les Indiens Mexicains. Le site principal du *vomito prieto* est la région maritime, dont le climat est excessivement chaud et humide. Le *matlazahuatl*, au contraire, porte l'épouvante et la

mort jusque dans l'intérieur du pays, sur le plateau central, aux régions les plus froides et les plus arides du royaume."—Vol. i., p. 352.

It appears that this disease prevailed periodically in Mexico, a long time before the arrival of Europeans upon our shores; but, as Humboldt remarks, so little has medicine been cultivated as a science in that country, ay in the capital itself, even at as late a period as its last visitation, 1762, that we now actually have no exact description of the *matlazahuatl*. Torquemada hazards the opinion that, in the two epidemics of this plague, the one in the year 1545, and the other in 1576, there died, in the former 800,000, and in the latter 2,000,000 Indians; but this conclusion, when we reflect upon the difficulty with which such estimates are made even at the present day, as, for example, the mortality caused by epidemic cholera, it is obvious must have been based upon data not very exact.

In the above extract, Humboldt says that this Indian epidemic had some analogy with yellow fever, or the *black vomit;* but, at the same time, he clearly establishes their distinctness. He gives several characteristics by which these two diseases are essentially distinguished. The *matlazahuatl* attacks only the descendents of the natives, while these same Mexican Indians are very rarely attacked by the *vomito prieto*, or the yellow fever. On the other hand, while the latter disease is restricted to the hot and humid atmosphere of the coast, the former spreads terror and death in the interior of the country, upon the central plateau, and in regions the most cold and the most arid. "It is true," says Humboldt, "that the Indians of the valley of Mexico, which, in 1761, perished by thousands, victims to the *matlazahuatl*, vomited blood by the nose and the mouth; but this hæmatemesis presents itself frequently under the tropics, as an accompaniment of bilious ataxique fevers."

History also informs us, as a matter of tradition, that the Atlantic regions of the United States, before the arrival of the Europeans, were, from time to time, desolated by what was called a *plague*. This occurred in 1535 and in 1612, among the Indians of Canada and New England. Upon this point, the following reference is made by Humboldt:

"*Stubbins Ffirth on Malignant Fever*, 1804, p. 12. Gookin rapporte le fait remarquable que, dans la *peste* qui régnoit, en 1612, parmi les Pawkunnawhutts, près de New-Plymouth, les Indiens malades avoient *la peau teinte en jaune*."—*Nouvelle-Espagne*, vol. iv., p. 484.

This disease was supposed by Dr. Rush to be identical with yellow fever; but Humboldt thinks it not improbable that it was the true *matlazahuatl*. He also thinks it quite probable that it was this same pestilence which, in the eleventh century, compelled the Toltèques to continue their migration toward the south. It is known to have made great ravages among the native Mexicans in 1545, 1576, 1736, 1737, 1761, and 1762.

Lest it may be thought, in view of our last two numbers, that we are affected with a *cacoëthes scribendi* upon the subject of yellow fever, it may not be amiss to mention here that Mr. Prescott's allusion to the *matlazahuatl* was due to a suggestion made by Dr. Hosack, who believes in the African origin of the yellow fever—its importation under the name of the *Bulam fever*. Now, as this involves a long-contested point, we shall, with due deference to the opinion of our valued friend, inquire into its merits as connected with the present subject.

No country is willing to father a terrible disease; and this we find illustrated in Mr. Prescott's letter, in the fact that the Venereal disease was first called by the Italians the *French* disease, while the French styled it the *Italian* disease; but soon all the European nations compromised the matter, by giving it an American origin. So in the case of yellow fever, we find our own city tracing it to the West India Islands; and these again to Africa. Our own belief is, that wherever it prevails epidemically, there are to be found its local causes combined with those of a general nature. As regards the *vomissement noir* of Vera Cruz, we fully agree with Humboldt in the opinion contained in the following extract from his "*Nouvelle-Espagne*:"

"'La Vera-Cruz n'a reçu le germe de cette cruelle maladie ni de Siam, ni de l'Afrique, ni des îles Antilles, ni de Carthagène des Indes, ni des Etats-Unis: ce germe a été produit (*engendrado*) dans son territoire même; il y existe sans cesse, mais il ne se développe que sous l'influence de certaines circonstances climatiques.' *Comoto*, dans son *Informe al prior del consulado de Vera-Cruz, del mes de junio*, 1803. (Manuscrit.)"—Vol. iv., p 550.

Behold, here we find the black vomit of Vera Cruz traced for its origin to our own Atlantic cities!

It may be thought that, if yellow fever is not of foreign origin, we ought to have accounts of its ravages among the early Spanish settlers. It does not, however, necessarily follow that the epoch of the first description of a disease is also the epoch of its first appearance; but, even upon the admission of its non-existence for one or two centuries after the discovery, no difficulty is presented in the way of explanation. The following rational view of this question is taken by Humboldt: In the sixteenth and seventeenth centuries, the mortality ought to have been the least; first, because, at this period, the equinoctial regions of America were visited by Spanish and Portuguese only, who, as they are the most southern nations of Europe, would be less liable, constitutionally, to the evil effects of an excessively hot climate, than the English and other inhabitants of northern Europe; secondly, because, in the islands of Cuba, Jamaica, and St. Domingo, the first colonies were not congregated in towns as populous as those which were subsequently built; and thirdly, because, on the discovery of continental America, the Spaniards, who were little attracted by commerce to its shores, which are generally hot and humid, preferred an interior residence upon the elevated plateau, characterized by a temperature analogous to that of their native country. Besides, it is an admitted law that, in the course of ages, the germs of a disease before unknown may be developed under a new concurrence of circumstances; but it is unnecessary to resort to this supposition, as there are no means of proving that yellow fever has not existed in tropical America from time immemorial.

At Vera Cruz is beautifully illustrated the effect of elevation, as equivalent to latitude; and here, too, are we taught the true nature of yellow fever, which, unlike all contagious diseases, or even the *matlazahuatl*, is strictly confined to the locality of its origin.

"The admirable order," says Humboldt, "with which different tribes of vegetables rise above another by strata, as it were, is nowhere more perceptible than in ascending from the port of Vera Cruz to the table-land of Perote. We see there the physiognomy of the country, the aspect of the sky, the form of plants, the figures of animals, the manners of the inhabitants, and the kind of cultivation followed by them, assume a different appearance at every step of our progress. As we ascend, nature appears gradually less animated, the beauty of

the vegetable forms diminishes, the shoots become less succulent, and the flowers less colored. The sight of the Mexican oak quiets the alarms of a traveller newly-landed at Vera Cruz. Its presence demonstrates to him that he has left behind him the zone so justly dreaded by the people of the north, under which the yellow fever exercises its ravages in New Spain. This inferior limit of oaks warns the colonist who inhabits the central table-land, how far he may descend toward the coast without dread of the mortal disease of the *vomito*."

Thus, in a few hours, may the naturalist ascend the whole scale of vegetation, which, as foreign to our subject, is not here detailed; while the European escapes in much less time from the fatal *vomissement noir*. Even the Creoles, who inhabit the elevated table-land, where the mean temperature is about 60°, and the thermometer sometimes sinks below the freezing point, suffer, when they descend the eastern declivity of the Cordillera, being thus plunged at once into the hot and deleterious atmosphere of Vera Cruz, even more than European strangers who approach it gradually by sea.

As Baron Humboldt viewed the subject of yellow fever with the eye of a philosopher, uninfluenced by any preconceived opinions, his conclusions are entitled to much weight; and hence we are unable to pass over the following paragraph, without presenting it to the reader in *totidem verbis*, but simply rendered into English:

"It is incontestible that the *vomito* is not contagious at Vera Cruz. In most countries, people regard as contagious, diseases which have not this character; but in Mexico, popular opinion does not interdict the approach of a non-acclimated stranger to the bed of a patient attacked with the *vomito*. No fact is ever cited which renders it probable that immediate contact, or the breath of the dying, is dangerous to nurses who are not acclimated. Upon the continent of equinoctial America, yellow fever is not more contagious than are the intermittent fevers of Europe."

In making the present researches, we have accidentally fallen upon an interesting fact relative to the history of vaccination. In 1520, variola, according to Humboldt, was introduced into Mexico, by a negro, the slave of Narvaez; and, from this period, it exercised its ravages throughout that extensive region, at regular intervals of 17 or 18 years; and notwithstanding European vessels frequently introduced the virus anew subsequently, it never became epidemic, except at these very marked intervals of time. The cow-pox was introduced into this country, in January, 1804; and as the Indians were accustomed to inoculation, it encountered no obstacles in its general use. Committees of vaccination (*juntas centrales*) were immediately formed to prevent the extinction of the virus; but it was, fortunately, soon found on the Mexican cows. In 1802, however, during the prevalence of a violent variolous epidemic, it was accidentally discovered that the prophylactic virtues of the vaccine virus had been long previously known in the Peruvian Andes. According to Humboldt, a negro slave had been inoculated in the house of the Marquis of Valleumbroso; but, as the specific effects did not follow, the operation was being repeated, when the man declared that he was sure that he should never have the small-pox, because in milking the cows, he had contracted a cutaneous disease, which, according to the old Indian herdsmen, was caused by contact with certain pustules sometimes found on the dugs of cows. Those having had this eruption, said the negro, never take the small-pox.

ART. II.—*Extirpation of a Tumor of the Parotid; with Observations upon the Pathology of that Gland.* By ALEX. E. HOSACK, M.D., of New York.

(*With a colored Lithograph.*)

EARLY in November, 1843, I was consulted by Isabella St. John, a colored woman, *æt.* 38, on account of a swelling directly under the ear and behind the angle of the lower jaw, on the left side of the face. Of a robust and good constitution, she had always enjoyed excellent health. Her occupation is that of a laundress. The tumor resembled, in its noduled surface, a Nova Scotia potato, a medium-sized one of which it also rivalled in dimensions. It was quite firm and evidently contained a fluid. Although the fluctuation could not be very distinctly detected throughout, yet it was very readily to be discerned in one of the prominences. The statement she gave me of her case, was as follows: About six years since, when under the influence of an emetic and while in the act of vomiting, she felt something give way behind the angle of the jaw; and upon raising her hand to the part, she discovered a small hard lump directly under the ear. It was tender, but not painful. From that time, its growth was very gradual until it attained the size of a small pullet's egg, when it remained stationary; and as she experienced very little inconvenience from it, it was allowed to remain undisturbed. About twelve months before its removal, it began to enlarge; and it continued to grow rapidly, but was unattended with pain. There was no appearance of swelling in the fauces, nor was the jaw in the least impeded in its motion. The point at which fluctuation was most discernible, when pressed upon, readily yielded to the finger; but upon increasing the pressure, a resisting substance was perceived, in which a small aperture existed; and through this the fluid receded, but reappeared immediately upon the discontinuance of the pressure. The whole tumor was rendered more prominent and tense, upon opening the mouth, in consequence probably of its being pressed outwardly by the angle of the jaw. Not being able to come to a definite conclusion as to the true character of the disease, I determined to make a small valvular opening to ascertain the nature of its contents. This revealed about a table-spoonful of a thin, amber-colored fluid of the consistency of the serum of the blood. During its flow, the color was twice suddenly changed to that of dark black, and it as suddenly returned to its original hue. There was no disposition in them to unite, the two having no affinity, as both remained separate and distinct in the cup in which they were received. The black matter was much darker than the darkest blood found in the veins of bodies, that have been some time in the dissecting room—a fact that will be more fully adverted to in the sequel.

I will, therefore, proceed to describe the operation, which was done on the 16th December, about ten days after the above examination, assisted by my friends, Drs. J. K. Rodgers, Wilkes, Minturn Post, and Van Rensselaer, and in presence also of several pupils.

The patient being placed in a chair, an incision was commenced behind the conch of the ear, which was extended quite down over the tumor, terminating in the sound structure of the neck. A second incision was begun directly below the lobe of the ear, and carried over and below the tumor, where it joined the first. Upon detaching the integument on either side, and exposing the surface of the tumor, the prominence before alluded to presented a very black appearance, in all respects resembling

that of melanosis. Progressing with the dissection on the side toward the face, I very soon came upon the anterior portion of the parotid gland, which, from its great vascularity and granulated structure, was immediately recognized; but it was found to be so intimately blended with the tumor as to leave no doubt that this gland was the seat of the disease. After having detached the integument on the opposite side of the tumor, I proceeded with great caution, making my way beneath it in search of the external carotid artery, which was distinctly felt pulsating directly within the digastric muscle; and finding this vessel to enter into, or at least to adhere to, the diseased mass, I determined to secure it at this point. I consequently placed two ligatures upon it, and divided it in the interspace. In consequence of the tumor being much reduced by the discharge of the fluid through the small opening made into it, it could readily be drawn in various directions, which greatly facilitated the remaining and most dangerous part of the operation. The diseased mass was now grasped with a double hook, and pulled downward and outward, while I dissected on, carefully advancing toward the extremity of the conical point of the inward extension of the parotid gland. It was at this point that the carotid artery was imbedded in the substance of the tumor, but which was not to be seen or felt until the diseased part was insulated, with the exception of the extremity above alluded to. By thus cautiously advancing step by step, I was enabled to complete the dissection; leaving the part connected with the carotid artery to be severed by the last stroke of the knife; and on the detachment of which, the vessel being wounded was immediately secured. The amount of blood lost during the operation did not exceed twenty-five ounces, although there were many important vessels divided; as, for instance, the posterior auris, and several branches of the temporal. The parotidean vein, from its great enlargement, was the cause of considerable embarrassment in the early part of the operation; but it was speedily secured by a ligature, and then divided. The number of vessels tied in all did not exceed fifteen. The portio dura of the seventh pair of nerves was also divided during the operation, as well as its branches, which were severed, in separating the tumor from its anterior connection with that portion of the gland resting upon the face; and which last portion, in concurrence with the gentlemen present, it was deemed not advisable to remove, as it was to all appearances perfectly sound. Upon inspecting the wound after the extirpation of the tumor, not a vestige of the gland (save the part just indicated), or of any diseased structure, could be discerned. The two orifices of the divided carotid artery with ligatures upon them, were to be seen pulsating at the bottom. The styloid muscles, as well as the anterior belly of the digastric, were exposed. The wound being cleansed, and all hemorrhage ceasing, the parts were brought together by the ordinary suture, sustained by adhesive straps. From this time, the patient continued to do well; the ligatures came away in the usual period, when the wound speedily healed. She has since perfectly recovered her strength, and she now enjoys excellent health. Immediately after the operation, I examined the removed mass, and found that the sack in front was quite firm and resisting, but of the ordinary thickness usually met with in encysted tumors about the neck. The posterior portion was very much enlarged; and upon being cut into, it presented a dense white structure of a scirrhous hardness, to the thickness of about from one half to three-quarters of an inch. This portion of the tumor had occupied the greatest depth of the wound, and it was found to be firmly ad-

herent to the external carotid artery for a considerable extent. The internal surface of the tumor presented an unusual appearance. The different concavities of the sack seemed to be irregularly lined with a pseudo-membranous formation of a very black color. By reference to the drawing, figs. 1 and 2, it will be observed that the black structure is much darker than a tissue would be, engorged with blood, or even where blood may have been deposited upon its surface.

This black substance appeared to be distinct and unconnected with the sack, otherwise than by contact or very slight adhesions. It could readily be scraped off, or separated by the handle of the knife; but it was not disturbed at the time, as I was desirous of preserving the tumor with all its peculiarities. I did not, however, succeed in doing so, as this adventitious substance became broken up during the process of maceration. Upon pouring off the macerating fluid from time to time, this dark matter was found at the bottom of the vessel, resembling the finer particles of the grounds of coffee.

From these circumstances considered in connection with the fact of the tarry-like matter being discharged alternately with the amber-colored fluid, and their not mingling when the puncture was made in exploring the disease, I am induced to conclude, that the black matter thus observed was melanosis in a semi-fluid state. The tumor may, therefore, be regarded as partaking of a three-fold character; first, the primary disease, that of an ordinary encysted tumor, having its origin within the substance of the parotid, or in a lymphatic gland imbedded in its structure. Secondly, that of scirrhus; and, thirdly, the adventitious formation of melanotic matter. The combination of these three distinctly marked diseases, is a circumstance I have never before met with, nor am I aware of any description of it by any surgical writers, either in this country or in Europe. Encysted tumors are never associated with scirrhus; for they are distinct in their character, and occur under different circumstances. No mention is made by the different writers of its being concomitant with other diseases, except that of cancer. I must, therefore, conclude that the combination of these three diseases is a circumstance of very rare occurrence.

As this latter disease, melanosis, is here presented in a form different from that usually met with, I feel the necessity of offering a few observations upon it, particularly as its true character is generally but little understood. We have no knowledge of its cause, nor are we aware of any means by which it can be cured. It occurs at any period of life, and in any temperament, attacking the most robust as well as the most feeble constitutions; and it is very generally fatal. Under these circumstances it is that every fact or peculiarity in appearance attending this disease, is deserving of special notice. The peculiar black matter has been frequently analysed by the French chemists, but nothing of importance has resulted from their investigations, further than that the dark coloring matter is carbon derived from the blood, and that it also contains fibrine, albumen, etc. According to Mérat, melanosis is divided into three classes. In the second, he describes it thus: "It is found," he says, "in very fine layers, extended over serous membranes, assuming an appearance of a glossy black color, similar to Indian ink, or to that black secretion found in the cuttle-fish." He goes on to state that he has seen it lining the whole peritoneum. MM. Andral and Brechet are quoted by Prof. John C. Warren as also having seen a liquid melanosis in

the cavity of the peritoneum; and M. Brechet further states, that he has seen it in some of the secretions. It is spoken of also by several writers,* as occasionally found in a fluid state in the lymphatic glands, when diseased. Many more instances, were it deemed necessary, might be here adduced in illustration. For further information, the curious reader is referred to the authorities just cited.

The operation of removing the parotid gland has been so frequently performed by surgeons on both sides of the Atlantic, that a detailed account of them here is unnecessary. The parotid gland is the seat of two diseases occurring within itself, and for which extirpation has usually been resorted to. The first is a mere hypertrophy, without any change of structure, but which, according to Sabatier, subsequently may become malignant. The second is that of scirrhus. It is, however, very often removed, when it is consecutively involved in disease originating either in the lymphatic glands or adjacent cellular structure. Among the many cases published, in which the parotid has been extirpated, we find that, in most of them, the gland was secondarily affected; and from this it may be inferred that scirrhus is comparatively of rare occurrence. Scirrhus is now justly considered a species of cancer;† but it is not as malignant when it appears in the parotid gland, as in some other parts of the body. It very often remains stationary for years, and is for the most part of a local character. In its progress, it sometimes assumes the form of an encephaloid cancer, with ulceration on its surface, which ulceration differs from that usually found in cancer located in other conglomerate glands, as for instance in a cancerous mamma, where the sore extends itself in the manner of exfoliation or sloughs on different parts of the surface; while in that of the parotid gland, the parts appear to be destroyed by the process of suppuration. With this view, then, of the disease, as well as in consideration of the highly vascular endowment of this gland, the operation of tying the common carotid artery for its cure, suggested itself to me; and this I have practised in several instances with entire success.‡ The operation of placing a ligature on the carotid artery is not very painful or dangerous in itself; and if not successful in causing an atrophy of the tumor, it cannot in any way interfere with its removal afterwards by the knife. Moreover, the patient may thus be saved the danger of a very severe and uncertain operation; for when it returns after an attempt to remove it, it occupies the same position, and, unlike cancerous affections elsewhere, the viscera of the chest and abdomen never become subsequently affected, as is too frequently the case when the breast is the seat of the disease. Such, at least, is the result of my own observation.

The extirpation of the parotid gland is now become one of frequent occurrence, comparatively. It was performed in the United States as early as 1804, by the father of Prof. J. C. Warren, of Boston;§ and in 1808 by Dr. Samuel White, of Hudson; and since then by Drs. McClellan, Randolph, and Prof. Gibson, of Philadelphia, by Drs. Mott, Parker, and Bush, of New York, and by Dr. N. R. Smith of Baltimore.

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* Chomel; Dupuytren, Anatomie Pathologique; Archives de Médicine, tom. v.; Dictionnaire de Sciences Medicales; Laennec de l'Auscultation Médiate; Dictionnaire de Médicine, 1841; Surgical Observations on Tumors, by Prof. Warren.

† See Muller, Warren's Walshe, and others. ‡ See cases in N.Y. Lancet, Vol. ii., p. 74.

§ See page 287 of Warren's Surgical Observations on Tumors.

ART. III.—*Pyretological Inquiries. Part 3d. What are the nature and the cause of Fever?* By WM. C. ROBERTS, M.D., Physician to the Northern Dispensary.

(*Continued from our last Number.*)

THE subordinate questions which must be replied to, before the above problem can be solved, are three. 1st. Is fever always an *essential disease:* are the inflammatory, or local lesions which accompany it merely secondary complications, or are they its point of departure, its exciting causes? 2dly. If it is essential, to what is its development owing? 3dly. Does the same cause which effects the development of essential fever, give rise to the typhoid symptoms observed in the progress of certain other maladies, or is their accession due to some other agency? Let us consult the authorities upon the subject. "Fevers appear to us," says Andral, "to be properly considered as a *general* affection, having equally their seats in the solids and liquids, and susceptible, during their course, *of complication with different local lesions.* We think, with Bordeu, that malignant fevers may be regarded as the blending together of several conjunct maladies. It is very common to find lesions in the digestive tube, but their intensity is very far from being always in proportion to the gravity of the symptoms. Even when considerable, although they sometimes seem to be justly regarded as the *punctum saliens* of the disease, at others they seem to be developed only during its course, and then appear to be only complications. In slight fevers, the point of departure is not always an irritation of the digestive passages. Several organs seem affected together, and it is not possible to determine which the starting point is. In more malignant forms, the same multiplicity of lesions is found. In them, as in slight fevers, the symptoms of the gastro-intestinal inflammations are sometimes very little marked during the course of the disease; sometimes they only appear at an advanced period; at other times they cease to show themselves, while the ataxo-adynamic symptoms still exist in all their intensity. The phenomena offered by continued fevers cannot all be explained by the existence of a gastro-enteritis." And again: "admitting that *simple,* or *follicular* enteritis is the commencement of a great number of fevers, can everything be explained by it? We never thought it could, and it has always appeared to us that those fevers never became severe, except in consequence of *a disturbance which supervenes in the innervation and hæmatosis.* This disturbance, which gives rise to the phenomena called adynamic or ataxic fevers, or in other words to the typhoid state (*Typhus, Aut.*), may be the result of several lesions of different nature and seat. 1st, gastro-intestinal inflammations give rise to it much more frequently than disease of any other organs. Of these inflammations, some are directed against the intestinal follicles, which become tumefied and ulcerate; others consist merely in a simple inflammation of the mucous membrane itself. Other organs, however, though less frequently than the digestive tube, may become the occasion of that profound disturbance of the innervation and hæmatosis, which constitutes the adynamic or ataxic fevers of Pinel. Such are phlebitis, pneumonia, erysipelas, etc., *or, the ataxo-adynamic fever may result from some alteration of the blood,* whether occurring spontaneously, or following the introduction of some deleterious agent. Then the disease is everywhere, where

blood and nerves are to be found, and in every part, lesions may occur which perform but *a secondary part* in the production of the symptoms." "Suppose a case of gastritis resulting from the ingestion of tartarized antimony, in which the symptoms are fairly typhoid. Is this typhoid fever? It is *not*, in the order and succession of the symptoms, that pyrexia which has for its anatomical character inflammation of Peyer's glands; but, with respect to the nature of the symptoms, it is a disease of the same family. It is a gastritis, in the course of which typhoid symptoms have become developed." We particularly beg of our reader to notice, that in the passages now quoted, we have affirmed by Andral, 1st, the Essentiality of Fevers: 2dly, their production by an external cause which affects the innervation and the hæmatosis (contagion); 3dly, their origination from the introduction of a deleterious agent into the blood; and, 4thly, the supervention of typhoid symptoms from certain causes, in the course of a primitive phlegmasia, which then becomes, not a typhoid fever, but a typhoid inflammation. These last are precisely the three modes in which the production of typhoid phenomena may be accounted for, as will hereafter be more fully expressed. An inaccuracy in language, which was noticed on p. 26 of the last number of this Journal, is here again perceptible: it consists in saying that "the phenomena called adynamic or ataxic fevers, may be the *result* of several different lesions." Believing, as Andral does, that in those fevers, these are the secondary consequences of a primitive disturbance in the nervous system and the blood, it is evident that the phrase quoted fails to express correctly his real meaning. This will appear from a consideration of the following passage from the Clinique. "If it is impossible to establish any relation between the intensity of the lesions and the severity of the symptoms, is it not reasonable to think that the different lesions which anatomy discovers in the digestive tube of patients who die during the course of a bad fever, *are not the cause of it?* Should it not be laid down, that the adynamic or ataxic phenomena depend *much less in these cases*, solely on the nature and intensity of the intestinal lesions, than *on the disposition in which these lesions*, slight or severe, *find the innervation?* If now, these different phenomena called adynamic or ataxic are observed in cases where, on opening the body, we find the digestive tube healthy, and other organs the seats of lesion, will not the proposition now stated, be found singularly confirmed by such facts, and shall we not be warranted in saying that the symptoms called adynamic or ataxic, *are the results of a disturbance in the action of the nervous centres; a disturbance sometimes primary, and which may then exist without a lesion appreciable on opening the body*, but most frequently consecutive; and then developed in consequence of the lesion of some organ of the digestive tube, as of any other?" Now, if "the different lesions discovered, &c.," be not the cause of the fever, they must be secondary to it, and it cannot be said, at least in *all* cases, to "result" from them, although, in the concluding sentence, Andral appears still to believe that in *some* instances this may be the case. But this will be seen to be doubtful. "Of these," to continue the quotation, "there are two classes; in some, the typhoid symptoms *coincide* with lesions of different organs, which may be considered as their origin, or, at least, the occasion of their development (language again of dubious propriety); in the others, these lesions themselves no longer exist, and it is to a primary, but as yet indeterminate alteration of the nervous centres, and of the blood,

that the symptoms should be referred." (Fevers strictly *essential.* Auth.) In the Essay on Pathological Hæmatology, recently published by this author, we find him separating, in the most formal manner, the pyrexiæ from the phlegmasiæ; pronouncing them in all respects as "*maladies apart*," and impossible to be confounded; in which the analysis of the blood offers a most remarkable distinctive difference. Such alterations, he asserts, as can sometimes, nay often be established, are the *effects of a hidden cause* which controls the organism, and causes certain symptoms. The blood in typhoid cases is diminished in fibrine, and tends to a sort of dissolution. Of the typhoid, putrid, ataxic, or adynamic state, the greatest development is seen in typhus proper; the pyrexia, now called "typhoid," presents it in a feeble degree at its invasion, *and* "*severe cases are especially the representation of it.*" It does not ordinarily exist in, but may complicate, the exanthemata, (and, we may add, other, as inflammatory diseases.) In all, when so characterized, a common alteration of the blood exists, whether primarily or secondarily induced. In the first of these, "*the specific cause*" so acts upon the blood, as to tend to destroy the spontaneously coagulating matter. When intense, its action begins early; it is a true *intoxication.*"

Chomel observes: "that the gravity of the lesion is not in proportion to that of the symptoms. Lesions of the follicles differ in degree, number, and condition. Now, if all the symptoms and gravity of the disease depended on lesion of the follicles, there ought to be a proportion between the lesions and symptoms, number and origin of the alterations. In some cases, the severest symptoms concur with the smallest number of diseased follicles; in others, the most serious lesions with symptoms of mediocre intensity." "Inflammation," he continues, "is secondary, when observation leads us to admit that in the subject affected, there exists a morbid condition, of which this inflammation is the consequence. It is primitive, when *it alone* constitutes the disease; of this, ophthalmia, idiopathic and intermittent, furnishes an example. The one form requires the usual antiphlogistic treatment. The other, developed under the influence of a particular cause, is cured by antiperiodic remedies." If then, let us observe in passing, dothinenterite always depend on a particular cause (infection), and as it *alone* does not constitute typhoid fever, it must, according to this, be *always secondary.* Chomel continues: "the lesions in typhoid fever are disseminated. Between them, the tissues are often healthy. This is a characteristic of various lesions of the skin, which, nevertheless, present very remarkable differences. Disseminated inflammations cannot be produced by the general causes of inflammation, nor does treatment influence them. Thus, scarlatina is not abridged by venesection, nor zona prolonged by tonics; each has a particular appropriate mode of termination. Some, as urticaria, terminate instantaneously, others are indefinite, and this, because *special causes* preside over their development. They are secondary; the cutaneous inflammation is only a phenomenon. They are only the expression of a morbid state or diathesis. Now, if such be the case, everything tends to the belief that inflammation of the intestinal follicles, if for no other reason than that they are disseminated, *is only one of the secondary phenomena of the disease called typhoid fever, and does not constitute the primitive one,* or the point of departure of the symptoms. If to these considerations furnished by analogy, we add the want of proportion between the gravity of the lesions and that of the symptoms, *remembering that the special lesion is sometimes*

wanting, it becomes still more evident that this inflammation is only one of the phenomena of the disease, and that it belongs, like most disseminated inflammations, to the secondary phlegmasiæ, and may be compared in this respect with the bubo of the plague." We commend most earnestly this argument to the especial consideration of the reader; it is, so far as we know, original, and is highly ingenious, if it be not unanswerable. It powerfully supports the idea of the analogy of typhus to the exanthemata, to which we shall hereafter allude. "If now," continues this able author, "the follicular inflammation is secondary, what is the cause of the malady? What the primitive lesion which presides over the development of this inflammation, and of all the other symptoms, and constitutes the essence of the malady?

"In the actual state of science, when no appreciable lesion can be discovered, or when those which do exist seem insufficient to explain the gravity of the symptoms, one is generally led to admit a concealed alteration somewhere, whether in the nervous system, or animal fluids. I should incline to the latter opinion, owing to the analogy which exists between typhus and other maladies in which there is manifest alteration of the fluids, as small-pox, measles, and, above all, contagious typhus. At present the contagiousness of the typhoid affection is uncertain. Were it to be established, it would only further corroborate the opinion, and offer an easy explanation of the reason why it occurs but once in the same subject, the want of proportion between the symptoms and the lesion, the absence of lesions, when none are discoverable, and the impotence of treatment."

"It cannot, however," says Dr. Tweedie, reverting now to the opinions of British pathologists, "be conceded, that in every form of fever, the local disease (follicular enteritis) does exist, as it has not been universally, nor even in the majority of instances, discovered on the most minute examination of the intestines in fatal cases. The more probable inference is, that this gastro-enteritis, or follicular disease, occurs only occasionally, and is much more common in some places than in others. Whether, when found, it is the cause or effect of the febrile symptoms by which it is accompanied, is still a question about which there is great diversity of opinion, though the majority of British physicians regard the intestinal lesions as only sequelæ of fever; fever being, then, an *essential disease*, the symptoms being independent of primary organic lesions, though, in the greater number of cases, local inflammation becomes developed in the course of the disease." "It seems difficult," says Christison, "for any one to survey dispassionately the whole facts, without coming to the conclusion that fever is *essentially a primary disease*, and that most, nay, possibly all of the local diseases which have been pointed out as the real source of it, *are nothing else but secondary affections*. In a great proportion of instances, when local inflammation does occur in fevers, it is *secondary in point of time*. It does not occur till the fever is fully developed, and often, not for a very long period. Hence, local inflammations are least frequent, as reason would lead us to infer, when fever runs a short course. There is something in the disease independent of local disorder. In Edinburgh, dothinenteritis is comparatively rare, but occasionally occurs, and is invariably secondary in point of time." "The local lesions," he says again, "are proved to be secondary, because they are sometimes all wanting; because they seldom make their appearance till the fever has subsisted for several days, and because they both

appear and disappear without the course of the fever being thereby materially altered in any essential symptom." It is but just, however, to state that these opinions are wholly at variance with those of M. Louis, who maintains that "in all who died between the eighth and twelfth days, the first symptoms were connected with a lesion of the intestinal canal." But when we remember that M. Louis is describing the fever of Paris; is incorrect in asserting the constancy of the intestinal lesion in *all* cases of typhoid fever; when we find him contradicting himself in other parts of his book, by the statements that "the symptoms at first are not peculiar to any disease," that the "diagnosis is sometimes indeterminate for a greater or less length of time," and "that the predominance of some symptoms changed more or less the usual appearance of the disease in some cases, so as to give them the appearance of putrid, adynamic, ataxic, or inflammatory fever," and lastly, that "the changes in the patches begin with the first symptoms *in at least half the cases*," we cannot, it appears to us, attach great importance to this sweeping assertion. It is not to be supposed, however, from what precedes, that Mons. Louis, like Broussais, attributes to his "plaques," the origin of his typhoid affection. By the latter he is evidently ranked as an ontologist,*

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* "The plates depend on the entity typhus; they are symptomatic, and one of its effects, having the privilege of constituting its anatomical characteristic, to the prejudice of all other lesions. Thus they produce the fever, and are produced by it." (Brouss. Ex. des doct., 2d Part, Par. 1836, chap. 4, p. 85. Critique on the Typhoid affect. of M. Louis.) If the sentiments expressed in the first of the above sentences are truly those of M. Louis, they coincide exactly with the best supported theory of the day. Able, however, as M. Louis's work certainly is, it is not without its inconsistencies, and the quibble contained in it, respecting the differences between enteritis proper and inflammation of the follicles, participated in by Chomel, is unworthy of him, and has received an ample exposure at the hands of Broussais, in the work above cited, and of Bouillaud. (See particularly Dict. de Med. et Chir. Prat. Art. 'Typhoide.') Nor has the caustic, energetic, and able, but prejudiced Broussais, overlooked other weak points in the production, as the following extracts will show. How far they may be considered as refutations, we must leave it to the profession to decide.

"M. Louis is sure of nothing, unless it be that the plates of the ileum alone explain the groupes of the symptoms of typhus. But explain—how? Thus, no explanation: simultaneousness of existence between the plates and the symptoms, between the symptoms and the plates; this is all I have been able to distinguish." "M. L. perceives all at once, that none of the symptoms is absolutely indispensable to its existence, and that he must have recourse to the order of their succession." "Eh bien! where would you believe that he has found the proof of the existence of the morbid plates of the ileum? In the stupor, somnolence, delirium, the elliptical and pink spots of the skin, and the sudamina, or miliary eruptions. Here, at least, is something positive. Beware, nevertheless, not to rejoice too soon. Learn from M. L. himself that there are simulated typhoid affections." "We must have pink lenticular spots (*which are not, according to him, indispensable*) and epistaxes (*which are wanting in more than half the cases*), to attest the existence of the typhoid plates (of Peyer). In short, all the symptoms which form the group of typhus *may be wanting*, if we examine them one after the other, to assure ourselves of those which are essential. Per contra, all the organic alterations which it is usual to find after these diseases, may equally be wanting, except the plates." "The plates may be affected in most other acute maladies, as they are in typhus, particularly in pneumonia; it is M. Louis himself who takes great pains to prove this. The plates may exist without either fever, or any of the symptoms called nervous." (Ex., p. 92.) "All this is not sufficient for M. Louis. He undertakes to prove that the morbid plates of the small intestine alone explain the phenomena of typhus, and as he meets with typhus in *which these plates do not exist*, is reduced to refuse to them the name of gastro-enteritis, without being able to substitute another, &c." (95.) "Not being

and he himself tells us that *the cause of the typhoid affection is unknown and wrapped in the greatest obscurity.*

Dr. Copland, after combating at length, in his extraordinary work, the inflammatory theory of fever (Dict., Part III., p. 913), states it as his opinion, that "the lesions met with in the disease (typhus), are to be considered as contingent phenomena, depending more upon the functional disorder, and consequent changes in the fluids and general organization, than upon the more palpable lesions of structure." "By attention," says Dr. Alison, "to certain particulars in the history of many febrile disorders, independently even of the results of practice, we are authorized to conclude that they may be distinguished from the effects of simple inflammation, and belong to the class of what we shall call for the present, Idiopathic fevers, and that the *onus probandi* rests with those who would attempt to assimilate them to, or resolve them into, the acknowledged effects of inflammation." (Outlines, p. 395.)* "The term Idiopathic," he elsewhere observes, "is to be understood as expressing the belief of an essential distinction existing between these fevers, and those which were formerly described as resulting from local inflammation, at the same time that there is a strong similarity, or coincidence, in many respects, of essential symptoms." (P. 437.) Again: "Whatever be the mode of action by which the morbific cause in Idiopathic fever comes to affect the circulation (system), it is to the direct action of this cause, and not to the influence of any local diseased action, excited in the body,

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able to base his *entity* either on the plates, which exist in a crowd of other maladies, nor on the nervous symptoms, which belong to all the great phlegmasiæ capable of upsetting the influence of the encephalon, M. Louis finds himself, in several places in his book, in an anguish which is almost capable of causing us to pardon his errors. He takes the desperate part of establishing the characters of his entity on the concurrence of phenomena, whether cadaveric or vital, and on their succession in a determinate order. This method is truly the height of medical ontology." (98.) "Does he wish to prove that the plates form the only anatomical character of the typhoid entity; he says that, although they are common to a host of acute and chronic diseases, they are *more* common in typhus, and concludes that they form its only essential anatomical character." "If the stomach offers serious lesions, he supposes them consecutive to the plates when they exist; if there are none, the disease loses the name of typhus. If the intestine be not furnished with plates, it loses it equally, and thus the author is never taken unawares." "Thus it is in phenomena, *which may fail, and are not positive when they exist* (the state of the spleen, the epistaxis, the lenticular spots and sudamina), that our author, repelled on all sides in his search after specific characters, places his entire confidence, *after having confessed that all the symptoms of typhus may exist without lesion of Peyer's plates, and that they may be diseased without the existence of a single symptom of typhus.*" (P. 110.) "The lenticular spots, and epistaxis, are not more frequent in enteritis than in any other acute malady. If they are common to so many acute maladies, why assign to them so distinguished a rank among the signs of typhus? If the sudamina are 'very rare in enteritis,' they may be met with in it, and cease thus to be a characteristic of typhus?" (115.) "All is finesse, calculation in the writings of Dr. L." (P. 120.)

We have made these quotations, though marked by some acerbity, because they will really be found to be mostly very just, and bear upon the disputed question of the separate nature of the typhoid affection, as compared with typhus. We might also inquire how M. Louis reconciles his assertion that "the lesion of the elliptical plates cannot be considered as one of the effects of fever" with his statement, that its "cause is unknown?" It is but proper, however, to say that M. Louis has published an "Examination" of the "Examen" of Broussais, which we have not seen.

* The reader will find the subject of the distinctive differences between fever and inflammation alluded to on pages 398 and 407, and particularly considered in extenso at Sect. 4, p. 430. See also Copland, loc. cit., and Southwood Smith, Treat. on Fever.

that we must ascribe the characteristic phenomena of Idiopathic, and especially of Typhoid fever." (442.) With one further quotation we dismiss the authorities relating to the nature of fever. "The nature of all these maladies," says Roche (Dict. de Med. et Ch. Prat., vol. xv., Art. Typhus), "resides in the blood. In them are none of those circumscribed lesions confined to a single organ, as are seen in most other maladies; but, on the contrary, multiplied disorders extended to several organs, and which attest the influence of *a morbific agent* distributed throughout the whole economy by the same passages."*

The conclusions to be drawn from what has now preceded, may be recapitulated as follows. 1st. In fevers, local lesions are sometimes absent. 2d. When present, they are oftenest secondary in point of time, and disproportionate in their gravity to the severity of the symptoms. 3d. The follicular inflammation of the intestines bears a strong analogy to the disseminated inflammations, which are always effects of a *materies morbi*, and not causes of fever. 4th. This lesion, which appears to be that *most frequently met with* in the bodies of those who die of typhoid fevers, does not occur in every case of the disease, nor can those cases with which it does coincide, be distinguished, by any essential symptom, from those in which it does not exist: and on these accounts, it cannot be considered to be, any more than any other local lesion, in whatsoever organ occurring, the cause, or point of departure of the febrile symptoms, but rather an effect, like them, of a morbific cause acting upon the entire economy. 5th. Other forms of muco-enteritis, occurring in connection with idiopathic fever, present similar symptoms to those of dothienenteritis, none of which are constant in the latter affection. 6th. Ataxo-adynamic symptoms result from the introduction into the blood, of poisonous agents, or are superinduced in the course of diseases not

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* Gaspard and Magendie, by injecting putrid substances into the veins of animals, induced in them all the symptoms of bad typhus, *and found that, in case of death, they exhibited, on dissection, local lesions corresponding with those we meet with in the human subject in fever* (inflammation and ulceration of the muc. memb. of the digestive tube, &c) (Stokes, Clin. Lec., p. 329.) "The putrid matter produced that morbid state of the whole system which is called *fever*, and the local inflammation was the result of that state." Local disease, besides being of itself sufficient to cause death, re-acts on the system, and prevents a critical termination; hence, the necessity for its detection and removal. In the latest treatise on General Pathology which has appeared (Prin. of Med., by C. J. B. Williams. Amer. Ed., p. 385), it is stated that "the very universality of the affection (typhoid fever), seems itself to point to some cause more general than can be found in any individual function; *and such a cause may be found in the blood.* The causes which appear thus *primarily* to affect the blood, are chiefly endemic, epidemic and infectious influences, called poisons" (386). "The similar, but less marked series of febrile movements which occur *in slight forms of continued fevers*, are instances of the operation of vital reaction attempting the expulsion of the noxious matter;" "individual organs may especially suffer in different cases;" and "the follicular inflammation and ulceration of the intestines in fever, may arise from the excessive irritation of the follicles (by the continued operation of the poison—note, p 220), in the exercise of this eliminating function." (P. 386–7.) In the note cited, he says: "The favorable influence of moderate diarrhœa in fever, the uncommon fetor of the stools, the general relation between the duration of the fever and the affection of the follicles, the salutary operation of mild mercurial remedies, which promote their secretions, and other facts which might be adduced, give so much countenance to this question, as to make it worthy of attention." The reader will observe in these passages, the perfect coincidence of opinion with those expressed throughout this essay. In this able work, however, all separate notice of the subject of essential fever is omitted!

primitively idiopathically febrile (as the phlegmasiæ and exanthemata), from causes, either *ab interno* or *ab externo*, which affect the innervation or the blood. In the latter event, the typhoid symptoms are secondary: whereas in true typhus, it is upon the primary influence of the morbific agent on the economy, that the phenomena, physiological and pathological, depend. 7th. Typhus and typhoid fever are induced and propagated by contagion, wherein it differs from the symptomatic fevers, and is assimilated to those which depend upon a specific cause. 8th. The appearance or disappearance of the symptoms of local lesions, in the course of typhous fevers, does not essentially modify that course, and in those fevers which run the shortest course, the fewest lesions are found. 9th. Idiopathic fevers cannot be confounded, on many accounts, with inflammations, nor resolved into their mere effects. Influenced by such of the considerations to be drawn from the preceding pages, as are here enumerated, and others not contained in this recapitulation, equally to be drawn from them, we are necessarily, as it seems to us, led to conclude that *true* TYPHOUS *Fever* is, in its *nature*, an *essential disease*, and that all the morbid lesions which are so frequently met with in it, are sequelæ, the consequences and not the causes of its development, and that the *cause* of fever is a morbific agent which acts as a poison upon either the nervous centres or the blood. And thus we reply to the query proposed in the second part of our Pyretological Inquiries.

But we have alluded only very generally to the *cause* of fever, while as to its nature, we have entered into detail. Without pretending to elaborate this vast, comprehensive, and, we might almost say, incomprehensible theme, which includes the whole subject of contagion, and would of itself require volumes for its exhaustion, we may with propriety briefly notice some of the points connected with the inquiry, if only as a guide to future investigation. Let us cite a few authorities, first as to what it is that causes fever, and secondly, as to how that something acts, and deduce thence a few corollaries, which, if not strictly accurate, may serve as a foundation on which the reader may build a better theory of his own. We begin with "An inquiry into the sources and mode of action of the Poison of Fever," by Alf. Hudson, M.B. "We regard," says he, "the essential disease termed fever, as the effect of the action on the living body of a morbid poison—in other words—of one of that peculiar class of substances which are generated during certain processes of decomposition, and which act upon the animal economy as deadly poisons." His first chapter is "of the infectious animal poison generated in the living human body, and capable of producing fever when applied to healthy bodies." He considers the proof that "the disease has arisen from exposure to the emanations from the bodies of those similarly affected," to be abundantly proved from the experience of the large fever hospitals of Great Britain; in which view, Tweedie, Alison, Christison, and Davidson, and in the fullest manner, Southwood Smith, concur. He acknowledges the importation of fever both by person and fomites: the latter being "among the most unquestionable sources of fever." He considers "a deficient and improper diet," and "anxiety and depression of spirits," as probably the essential causes of the generation of the poison, and "a want of fresh air," and "want of cleanliness, and chiefly a want of a proper renewal and change of clothes," to assist in producing its accumulation. The second chapter is "of a fever, generated during the decomposition of dead organic

matters," which are either animal or vegetable, or a mixture of both. This miasm, Dr. H. calls "paludal," and is independent of the infection of true typhus. It is admitted, he says, by S. Smith, Christison, Cheyne, and others. This point is ably considered in extenso, and would appear to differ from the malaria on which remittent and intermittent fevers depend, not typhoid, since they are not mentioned in the chapter. There can be no doubt that this essay is able and ingenious, but as the author has nowhere distinctly stated his own conclusions, they are left to be inferred with difficulty, from the great amount of matter which it contains. Among the sources of this paludal miasm we find enumerated, the effluvia emanating from putrefying bodies; choked sewers; the leaky soil-pipe of a privy: from water-closets insufficiently supplied with water; the overflowing of a kitchen with a filthy fluid; dry streams, and putrefying vegetables.* But the most remarkable statement made by Dr. H. is this: that the fever so produced is not infectious. It is hence inferred *to differ from true typhus:* and he adds, "but in the kind of fever now under consideration (the paludal), there is a local affection generally considered as inflammatory, which is so constantly present, etc., (dothinenteritis)," and that this lesion is sometimes found so far advanced at an early period of fever, "that it cannot be regarded as a secondary phenomenon." His paper favors the idea that this paludal typhoid fever differs from typhus, and he quotes Stewart, and Dr. Gerhard, of Philadelphia, with approbation. To a consideration of these views we shall hereafter return. The Essay of Dr. Davidson, on "the sources and mode of propagation of the continued fevers of Great Britain and Ireland," is, perhaps, as a whole, superior as to research, to that of Dr. Hudson, but of questionable authority. Dr. D. asserts that typhus is propagated by contagion, and proves it in the fullest manner by an extensive analysis of the writings of Barker and Cheyne, Tweedie, and others. Considering it with him as fully established, we shall not enter into a consideration of the arguments he employs to prove that the opinion of the anti-contagionists, viz., that a peculiar malaria, generated in hospitals, &c., in which the contagion is said to have occurred, propagates the disease, is untenable, referring the reader to the essay itself for conviction. But Dr. Davidson maintains, and he founds his argument upon the analogy between typhus and the exanthemata, that the former disease can be propagated by only one cause, namely, contagion. This Dr. Hudson denies, and, as it appears to us, very justly, for we have seen that typhus may be engendered *de novo*

* "There is now abundant evidence that drains, cesspools, and other repositories for offal and putrefying organic matters, evolve exhalations which, when concentrated, may generate low fevers; and when more diluted, may considerably impair the health of those exposed to them." (Prin. of Med. by Williams, Am. edit., 1844, p. 75.) It is to be regretted, as adding to the confusion which already exists on these subjects, that the able editor of this work, in the admirable notes with which he has everywhere enriched it, should say that the application of the term "miasm, or malaria," is arbitrary, and that "to speak of miasm as an *effluvium* or *emanation* is pure hypothesis," and that it is an "imaginary essence or abstraction." (Note on p. 75.) It does not follow, "with any show of common logic," that we are to deny the "existence" of that of "whose distinctive properties we are entirely ignorant." Can it with truth be said that "miasm does not express the idea of anything appreciable by our senses?" On a following page we find him saying, "the air, under these circumstances, is contaminated by effluvia and emanations which deteriorate," &c. This is a contradiction in terms. But we will not pursue the subject.

under the influence of moral and physical causes. (Vide Law. Dub. Med. Jour., vol. xiv.) We see in this dispute, the necessity for precision of language; for contagion may well be the only mode of the *propagation* of fever after it is engendered, although it be not invariably its sole exciting cause, though this is not probably the idea which Dr. Davidson intends to convey. On the "Analogy of Typhus to the Exanthematous fevers," which he supports in the fullest manner, and in which Drs. Hudson, Perry, Peebles, &c., concur, his paper is most explicit. Dr. D. next considers the "alleged" sources of continued fevers from putrid effluvia, the exhalations of the human body, of jail fever from filth and impure air, and river malaria, to all of which, influenced by preconceived theory, and opposed, as we think, to positive evidence to the contrary, he denies any agency. The prominent circumstances which favor the diffusion of contagious continued fever, are four: 1st. Humidity of atmosphere. 2d. Poverty, famine, and food of bad quality. 3d. An accumulation of persons not previously affected; and 4th. Filth and deficient ventilation; the two last of which, if combined, would, in our judgment, undoubtedly suffice for its engenderment. There are also some circumstances, which we omit, which tend to render fevers communicable from one person to another (i. e., strictly contagious); but upon all the points now enumerated, the reader will find the essay an invaluable work of reference. Lastly, in the concluding part, the identity between British typhus and French dothinenterite is ably asserted and sustained. "The typhoid symptoms," says Alison, "may always be held to imply the action on the system of some cause distinct from mere local inflammation." "In Idiopathic Fever, not only is a diseased action excited throughout the system, similar to that which local inflammation can excite, but the system is at the same time under the influence of a cause which acts on it after the manner of a poison, which we know from the history of the disease, to be probably engendered occasionally *within the system itself*, but to be most frequently absorbed from without." Dr. Alison is further of opinion that malaria and contagion are both causes of epidemic malignant fever. He is a strong supporter of the contagion of typhus (witness his excellent essay on the subject in the Ed. Med. & S. Jour., vol. 28), but thinks that it may originate occasionally from some circumstances of more general and permanent existence. Which is the most probable, is not established; but perhaps long-continued mental depression and anxiety have been assigned with more plausibility than any cause, for its *spontaneous* generation, it being then propagated by contagion. "The miasm," says Cruveilhier, "is absorbed by the lungs, is carried into the torrent of the circulation and infects the blood. Sometimes it acts directly—sometimes it needs a certain period of incubation." "The causes," says Roche, "which produce the intermittent of marshes, typhus, yellow fever, plague, and the Asiatic cholera-morbus, are substances in the state of vapor, or of gas, absorbable and deleterious, which introduce themselves into the economy, chiefly by the respiratory passages. They are, then, poisons, since they act like the bodies to which that name is given." "Physiological experiment demonstrates that all substances injected into the veins, or absorbed by different surfaces, if they do not exert a chemical action on the blood, pass in nature into this fluid, impregnate in nature all the organs, and are eliminated in nature by the pulmonary and cutaneous transpirations, and by the way of the intestinal and urinary secre-

tions." The preceding quotations will enable us to deduce, hereafter, the conclusions to which it seems necessary to come in the present state of our knowledge, as to the question, what it is that causes fever? which we have necessarily examined in the most cursory manner. Let us next inquire, How does that something act in producing that effect? Without pretending to enter fully into the consideration of this question, it may be stated that the opinions of the majority of physicians of the present day are divided, as to the theory of fever, into two parties; the solidists and the humoralists; the first believing that the *materies morbi* acts primarily upon the brain and nervous system, the latter, upon the blood. Among the first may be ranked Christison, Marsh, Law, Southwood Smith, Copland, and perhaps, for he does not speak decidedly, Alison. Among the latter are Tweedie, Cruveilhier, Andral, Chomel, Roche, Gerhard, Hudson, &c. In the Outlines of Pathology, by Dr. Alison, and in the paper cited, by Dr. Hudson, the reader will find an ample consideration of the subject under review. To the work of the latter we especially refer him · the sentiments of Andral and Chomel may be gleaned from our preceding pages.*

We shall content ourselves with a few notices of the opinions expressed only by those who advocate the humoral origin of fever, as to do as much with those of writers on the opposite side of the question, would occupy a space which is not at our disposal. Let us state the question in the words of Alison: "It may be questioned whether the effect on the nervous system essential to fever, is produced directly by the external cause of fever, or whether that cause first works a change on the blood, and through its intervention, affects the brain and nerves." (Lib. cit., p. 438.) It might further be questioned, how, in either event, the inflammation of particular organs was effected; to this point we may hereafter allude. "The miasm," says Cruveilhier, "absorbed by the lungs, is carried into the torrent of the circulation, and infects the blood." "It is sufficiently demonstrated," says Roche, "from what precedes, that the nature of typhus consists in an infection of the blood. This promptly gives birth to congestions at first, and then to inflammations in the principal organs, and especially in the gastro-intestinal mucous membrane, in the meninges and brain, then in the lungs, liver, and, lastly, the pleura." Dr. Tweedie says, "whether the opinion of the older writers, that in fevers originating from contagion, the contagious principle alters the properties of the blood, be correct or not, we certainly think the strong analogy in the cases alluded to, tends to confirm the supposition of typhoid fevers originating in diseased blood." (Cyclop. Fever.) After having discussed the principal arguments for the nervous theory, derived from the mode of access (Marsh. Law), Dr. Hudson proceeds to submit (p. 120, Amer. edit. Philada. 1841) some of those which tend to support a "modified humoral theory," and first examines those derived from the fact that

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* Perhaps no wiser conclusion can be come to on this much disputed point, than that of Stokes (Clinical Lectures). "The humoralists erred by fixing its seat in the fluids, the solidists by limiting its locality to the solids. We recognize no distinction between the fluids and solids so far as fever is concerned; they all form parts of the great whole: one cannot act without the other, but their mutual reaction is extensive and various. Fever, in its origin, implies no tangible condition of the system, and we know it only as consisting of a group of phenomena, varying as to their cause, seat, effect and duration."

the sources of fever have the power to kill the blood at once, when their poison is introduced into it in sufficient quantity; next alludes to the fact of its occasional latency in the system, in which it resembles other morbid poisons; 2dly, its being a *cumulative poison*, of which the proofs are abundant, and tend to show a gradual deterioration of the vital fluid, from which at length fever ensues; 3dly, the reproduction of the poison of contagion, a fact not dreamt of in the philosophy of the solidists, and where their analogy is at fault, for the poisons from whose action it is, according to them, derived, are not reproduced. "Neither will any supposable impression upon the nervous system, explain the continued reproduction of the same febrile phenomena, and the same miasm through an indefinite series of individuals." The fever produced by a strong mental impression, though reconcileable still with the humoral theory, is not reproduced. Dr. H. quotes Liebig's analogy of "the mode of action of a morbid virus, with the action of yeast upon liquids containing sugar and gluten" (the influence in either case depending on the same cause), as the analogy which the humoral theory has for the reproduction of the poison; but this is too long for insertion. He then continues, after an attempt at a rationale of the action of the causes of fever in accordance with its principles; "assuming then that the primary action of the febrile poison is upon the blood, there can be but one *essential cause* of fever, viz., *The introduction of that poison into that fluid.*" How its activity will be determined, increased, diminished, modified, combined, under the influence of exciting and predisposing causes, and the dose of the poison, though ably set forth by the author, the general character of this part of our essay does not allow us to inquire. The arguments for the foregoing theory of fever being obviously much strengthened by our being able to show that the phenomena of typhus entitle it to a place among special contagions, Dr. H. enters into a thorough investigation of a fact now very generally admitted, viz., its resemblance to and classification with the exanthemata. To this interesting topic of inquiry, we can do no more than allude. We have already mentioned the views of Dr. Hudson, relating to the paludal miasmatic origin of typhoid fever, which he seems to consider as identical with dothinenteritis, and different from true typhus, and not contagious. The view here taken is of very questionable correctness, but we shall not now examine it. Let us follow him, however, in some of his objections to the nervous theory of the action of the cause of fever. In allusion to the remark of Dr. S. Smith, that "changes in the fluids can only be second in the series of morbid events," Dr. H. observes: "We rather think that the evidence existing on the subject, if fairly examined, points to the blood as the seat of the primary operations of the morbific agent, and the subject of the changes which it is a part of its condition necessarily to produce." "Instead of Dr. Smith's formula of the order of successive derangements in fever, the more correct one will probably be, first, the molecular change in the blood, then the suspension or modification of the interstitial processes (suggested by Dr. Hodgkin), or change of particles, then certain derangements of innervation, of the heart's action, and the result, formed fever." "The pathological changes (of spleen, liver, and heart, inflammation of the brain and thoracic viscera), as well as the derangement of function constituting *fever*, will probably best be explained by some such hypothesis as that advanced by Dr. Hodgkin, which supposes the febrile state to depend upon a suspension, or, at least, very considerable interruption of that

process by which, during health, the various parts of the system are continually undergoing a change, the old materials being renewed, while others are substituted in their place, which is perfectly in accordance with the hypothesis of the action of a morbid poison on the blood." For the proofs of these various assertions, we must refer to the original work, our object being solely to put the reader in possession of the views entertained on both sides of the question, while leaving him to decide for himself upon the merits of either theory. Respecting the origin of the dothinenteritis in this form of fever, Dr. H. considers it "not as an effect of the fever, or of the state of the nervous and circulating systems produced by the fever, but as the direct effect of the poison itself; a consequence of the effort made by the excretory organs, more especially the liver, to rid the system of the poison which has been introduced into the blood, the inflammation of the follicles resulting from the irritating effects of the acrid and depraved biliary secretion." "This view," he says (a strictly hypothetical one, although supported by the generally acknowledged idea of the eliminative effect in fever, by which the morbific principle is directed toward the great emunctories of the economy), "of the relations of dothinenteritis to the action of the septic poison, differs both from that which regards it as the cause of fever, and from that which assigns to it merely a secondary place in this affection." "*It is one of the phenomena* of the second stage in the action of the poison: *its occurrence cannot be considered as essential to typhoid fever*," "a concurrence and contingent effect of the poison; most of the other pathological changes being capable of explanation by the alterations in the constitution of the blood." If this be true with respect to dothinenteritis, why, we may reasonably ask, does Dr. Hudson incline to the belief of a difference between his paludal typhoid and typhus fever, founded upon, *inter alias*, a difference in the pathology of the diseases; this dothinenteritis being, according to him, "a constant and a most important complication in the kind of fever under consideration (paludal), if indeed it be not the pathological cause of the disease?" (P. 163.) We have here assigned, one cause for the production of the local affection called follicular enteritis, by the morbific cause of fever. We scarcely know whether the following citation from Cruveilhier, may be said to offer another. "The centrifugal, or reactive movement arrives: heat and development of the pulse occur: it is at this moment that the *miasmatic cause* is directed upon such or such organ, now upon the isolated or agminated follicles, when follicular enteritis ensues, now upon the mucous membrane of the large intestine, and we have diarrhœa or dysentery. At other times, the miasmatic cause is directed on the lungs or brain; sometimes it exhausts itself upon a single organ, sometimes is carried, simultaneously, or successively, upon several, for there are such medical constitutions; and individual varieties, varieties of influences of every sort, in the midst of which typhus is developed, explain the innumerable differences which different epidemics present." According to Southwood Smith, "the condition of the nervous system which produces the derangement in the circle of organs, occasions further in that portion of the circulating system which consists of the capillary blood-vessels, that peculiar state which constitutes inflammation; hence, inflammation is almost always established in one or more of the organs comprehended in the febrile circle, and sometimes in all of them." Here, then, are two of the modes in which the poison of fever has been supposed to produce the local in-

flammations which so constantly attend upon that disease, and another which assigns a particular cause for that inflammatory lesion denominated dothinenterite.

"If," says Dr. Hudson, in reference to the view we have quoted from Smith, "dothinenterite were a consequence of disordered circulation, depending on an impression on the brain and spinal chord, we might expect to meet it in other cases in which these organs are engaged, as typhus; but we do not." Now, if the view which we have taken of the identity of the London typhus with dothinenterite, in many respects at least, as shown by Tweedie, Smith, Bright, and Roupell; of Scotch typhus by Alison and Christison; of Irish typhus by Stokes, be correct, Dr. H. is surely not justified in making this unqualified assertion, and is guilty of the common error of medical theorists, that of perverting fact in the support of hypothesis. We refer to the works of these authors, in proof of the assertion of Stokes relatively to the typhus of Ireland, that "the fact is, that intestinal ulcerations have been repeatedly observed" in the typhus of Great Britain.* The reader can scarcely be unacquainted with the magnificent plates of the condition of the intestines in fever, contained in Dr. Bright's Medical Reports, which offer alone sufficient testimony to the truth of this assertion. In what, then, consists the difference, in these cases of what their authors designate typhus, between them and dothinenteritis in the sense of the typhoid affection, except in the severity of the symptoms and of the lesions themselves? How the cause of fever produces local inflammation, we must agree with Alison, is a question which, in spite of all that has been said, remains obscure. With one quotation more, from the author last named, which we find we have omitted, we dismiss the subject. "There is nothing inconsistent with what is known of the action of poisons on the animal economy, in supposing that the morbific cause of fever, after existing some time, and perhaps multiplying itself in the fluids, may act simultaneously on the constitution of the blood, *on the vital affinities of the capillary vessels*, on the powers of the heart, and vital action of the brain and nerves."

We shall next say a very few words only on the subject of the contagion of fever. "Contagion," says Prof. Joseph M. Smith (in his Elements of the Etiology and Philosophy of Epidemics, 1824—a work which is equally distinguished for elegance of style, extent of erudition, and a highly philosophical spirit, and the production of a gentleman who holds, deservedly, the highest position in his profession, both as a teacher and practitioner), "is a poison generated by morbid animal secretions, possessing the power of inducing a like morbid action in healthy bodies, whereby it is reproduced and indefinitely multiplied." To this definition Rochoux adds, "*whatever be, moreover, the primitive origin of this principle*, the conditions which render its impregnation more or less easy, the ways by which it occurs, and the manner in which it is effected." (Dict. de Med. Par. 1834, tome 8, Contagion.) "Infection," says Prof. Smith, "is a febrific agent, produced by the decomposition of animal and vegetable substances, usually existing in a state of gas or miasm."†

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* Hodgkin. Lects. on Morbid Anat. of the Serous and Mucous Memb. Lond. 1843. Vol. ii., p. 481. "Although the lesions of the aggregated glands have been detected in most of the fatal cases of fever which I have examined, I have seen others in which, so far from being deranged, they have been barely discernible." Dothinenteritis then, in Dr. H.'s experience, has been a frequent but not a constant lesion, in the fevers of London.

† Dr. Williams (Prin. of Med.) regards infection and contagion as synonymous and

There is yet another mode in which epidemic diseases originate, viz., in the vicissitudes of temperature, moisture, and occult atmospheric influences, to which the same learned author has attached the term *meteoratious;* but we do not find typhus included under this head in his classification. Neither in that classification do we find typhus classed under the head of contagious diseases, but under that of infectious; while measles, scarlatina, and whooping-cough are considered as contagious. Now, neither these nor typhus can be considered as strictly contagious, in the sense that itch, syphilis, and vaccinia, are, but equally appear to depend upon the exhalation from the body, of the peculiar virus, or contagion, to use Dr. Smith's definition, which produces the like disease in the healthy, and seem to us equally deserving the epithet contagious. It is in this sense that typhus is said and universally admitted to be a contagious disease.

But typhus is also an infectious disease, having many times a primary origin independent of excreted effluvium from the bodies of those who labor under it; it being, as we think, abundantly proved to occur, as stated by Prof. Smith, from the "excretions of the (healthy) human body in unventilated" or crowded apartments, assisted by "an unwholesome and deficient alimentation, vicissitudes of weather," filth, and the influence of strong and depressing mental impressions. This species of miasm being *personal*, was called by Dr. Ed. Miller, idio-miasma, and by Dr. Smith, according to the degree of its intensity, *per* and *protidio-miasma*. That such miasms are the *primitive* sources of typhus, can scarcely be doubted, for to be reproduced it must first be produced; nor will the fact that typhus is a contagio-infectious malady, as it appears to us, admit of any more dispute. A typhus breaking out under circumstances favorable to the production of common or public miasma, as for example in a filthy jail, situated in a malarious locality, or along the banks of a nearly dry, foul, and sluggish stream, would result in the production of a compound miasma, denominated idio-koino miasma; which, although it cannot be the primitive cause of the disease, would ultimately tend to impress upon it characters of a very high degree of malignity, and add to its violence, extension and fatality (malignant forms of compound fevers).

But if the contagious nature of typhus is universally admitted, it is not so with that form of disease to which the term "typhoid affection," used in the sense of dothinenteritis, is applied. Bretonneau and Gendron consider it eminently so. By Andral, Bouillaud, Rochoux, and Hudson, this is denied, and by Chomel only conditionally admitted. Were this proved to be correct, it would seem at first sight to give great countenance to the idea of those who desire to form of the two affections, maladies radically dissimilar. Chomel observes: "the opinions adopted by most French physicians, that the typhoid affection is *not* contagious, cannot be considered as demonstrated. If contagious, it is feebly so, and under circumstances as yet ill demonstrated." Andral, on the other hand, says:—"We confidently assert that in Paris, either in the hospitals or

convertible terms. This error is ably exposed, and the true meaning of either term explained by Dr. Bell in a valuable note (p. 80, Am ed.) Dr. W. suggests the possibility of the parasitic nature of contagion, in which he evidently believes, as also in the infectio-contagious nature of typhus, and the *specific* nature of the causes of fever. We also find Dr. Bell asserting the origin of typhus from contagion proper (81), and its being a product of infection (82).

out of them, we never recognize in this disease the slightest appearance of a contagious character. If the affection were contagious, medical students who nurse their sick friends at home, with the greatest assiduity, in small and close apartments (many of whom contract it in the course of their studies), would almost all contract it; and yet we do not remember to have seen the disease even once arise in this way, in a healthy individual." "Individuals who are attacked with it," says Bouillaud, "constitute to a certain point a focus of infection for the persons who surround them. But from this to contagion, such as exists in small-pox for example, there is a whole heaven of difference. No person has been known, attacked with a true typhoid fever, to communicate it to another; and supposing even that an individual fell sick only from having been in contact with another person attacked with typhus, it is infinitely probable that the disease he would contract would be something else than an alteration of the plates of Peyer. But no well-observed fact justifies this hypothesis even. In the twenty years during which this question has been studied at Paris, thousands of patients and thousands of students have been placed in contact, an infinite number of times, with persons laboring under typhoid fever, and never has a case of contagion been met with."

We perceive that in the passage now quoted, Bouillaud establishes the difference between contagion and infection, and very properly, for the difference is great. If, however, the nurse of a dothinenteritic patient, confined in a close apartment, the air of which must of necessity be more or less vitiated, did contract from him the typhoid affection, a morbid cause producing a like morbid effect, it would be difficult to deny or to disprove that that person did contract the disease by contagion. As to there resulting diseases of a different nature, as dysentery for example, such instances, though rare, cannot be denied to have happened, and are instances of infection. "The circumstances," says Hudson, "accompanying exposure to one kind of poison, instead of acting as accessories to the action of that poison, may cause the immediate action of another *previously latent*. This is the only reasonable way of explaining the cases of irregular contagion, which Marsh and others relate, of typhus received from small-pox, scarlatina from typhus, and typhus from puerperal fever."

Dr. Hudson, as we have before stated, enters into a lengthened examination of authorities to show the non-contagiousness of dothinenteritis, which he considers to be of endemical (infectious) origin, and differing in its nature from typhus; while, at the same time, he acknowledges that the follicular inflammation is not the cause of the disease, but only a secondary effect of the septic poison. He makes out a very strong case, which, if it could be finally proved, would go far towards establishing the non-identity of typhus and follicular enteritis. But, unfortunately for his argument, he says, on page 177 of the American edition of his paper, in speaking of the paludal fever as it occurred in the Navan Fever Hospital: "Thus, for the first three years, the prominent features were pain, tenderness and meteorism of the abdomen, diarrhœa, &c.; petechiæ were not frequent, and were late in their appearance, *and we had few instances of communication by contagion*. During the three years following, a highly contagious fever prevailed, &c." Now, if the dothinenteritis of the first period presented but *few* instances of contagion, *it did present some*, and if so, cannot be said to be invariably a non-contagious

fever, distinct from contagious typhus, *though it may be feebly so*, owing, perhaps, to the peculiarity in the exciting miasm, its greater dilution, &c., and *this is probably the truth with regard to the affection in question*, and so far the identity with typhus is sustained, except that it is, in most cases, a disease of diminished severity, which is the view we originally took of the question. But were it proved never to be contagious, the supporters of the identity of the two forms of disease might yet intrench themselves behind the opinion of the able Christison, who asserts that "there is not a shadow of evidence to prove that actual contact is necessary for the transmission of any one febrile disease from the sick to the healthy, least of all certainly for the transmission of continued fevers, fever being infectious by miasm and effluvium," and proposes the term "communication" as a substitute for contagion. If this were to be admitted, the diseases would stand upon an equal footing. If by the words "actual contact," touch is meant, Dr. Christison must be acknowledged to be correct, and also that the general diffusion of the poison throughout the apartment, is a much more likely mode of communication than the atmosphere which immediately surrounds the body of the patient. Nevertheless, sudden, nay, instantaneous impressions have been received from the bodies of typhoid patients by what has amounted almost to actual contact, as when stooping down to examine the petechial spots upon their bodies; suddenly turning down their bed-clothes; in one instance, by an effluvium received by an individual while supporting a convalescent across the floor; in another, while examining the stools, in which, as Roche says, the morbific virus passes in nature, &c., whence we think that Dr. Christison's unqualified assertion must be received with some grains of allowance. Cases in which one person contracts from another typhus fever, say, for instance, by attending upon him during his illness, the virus in such a case arising from morbid animal secretion, and not from the decomposition of animal or vegetable matter, the morbid poison producing on a healthy body a like morbid effect, are, according to Dr. Smith's definition, and can be nothing else than, cases of contagion, by which, then, as well as by infection, which must be considered as the primary cause, typhus fever may be generated;* upon which grounds we differ with Dr. Christison, and prefer to the situation which Dr. Smith has assigned to typhus, in his Synopsis of the Remote Causes of Disease, that given it by Dr. Hosack, viz., Genus 2d, a contagious disease communicable both by contact and the atmosphere;" *ergo*, infectious, to which Dr. H. adds, communicable only through the medium of impure air.† We have not observed, in examining Dr. Smith's pages, that typhus is said to be developed under the

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* Once formed, it is propagated by contagion, each patient becoming a little focus of infection sufficiently energetic to communicate it to healthy individuals who approach him.—*Roche*, art. cit.

† We have the authority of Dr. Thomson (Lect. on Inf., 486) for this statement. "Typhus fever, small-pox, measles, whooping-cough, scarlatina, and hospital gangrene, are communicated, not only by actual contact, but also by the transmission of an effluvium from the fomes, or original source of infection, by the medium of the air. Some of these diseases are never generated *de novo;* others, again, as typhus, and probably hospital gangrene, seem capaple of being produced in certain circumstances where the individuals affected by them have not been exposed to infection (contagion rather). Thus, simple exposure to a close atmosphere, is sufficient for this purpose."

influence of meteoration; but we were surprised, we confess, at meeting with the following passage, on page 31 of the Philos.: "In this manner, typhus produces typhus, and hence the erroneous conclusion, that the disease is propagated by means of a specific contagion." If Typhus produces Typhus, what is that but specific contagion? If infection is supposed as the cause, with what was the apartment infected but with the morbid excreta from the sick body, which produced a like morbid action on a healthy one? "This error," continues Prof. Smith, "respecting the contagious quality of typhus, is at once corrected by distinguishing secreted poisons from effluvia generated by foul excretions. But it is impossible that a man lying sick of typhus, should not secrete (*i. e.* produce) some of its specific morbid poison, and excrete it too; and if so, why may not such secreted and excreted poison be supposed to have some influence in producing the like morbid action, when it occurs, as well as the mere foul effluvia of the apartment, which may just as well produce some other disease?* May it not be that mild forms of fever, resulting from such exposure, are after all only cases of typhoid fever, in the strictest sense of the word; and that the dysentery which, according to Dr. Smith, page 65, the attendants about a *typhous* patient more frequently contract than they do typhus, and which, "when it arises from human effluvia, is always of the typhous character" (66); is merely typhus, of which the inflammation of the large intestine, like that of the small, is one of the secondary phenomena. Dr. Tweedie, whose work is acknowledged, even by Hudson, "to contain numerous cases of dothinenteritis," asserts, equally of these, as it should seem, that "he has no hesitation in stating, after an impartial inquiry into the

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* Six nurses in a receiving-ship infected with typhus, mentioned by Roupell, who returned home when off duty, took the disease, which again broke out in their houses on shore (previously healthy), the cases there presenting the symptoms and *characteristic* rash of the cases on board the vessel. Is this specific contagion, or is Prof. Smith correct in denying to typhus any such property? Such cases do not originate from the decomposition of *dead* animal and vegetable matter. They are not, therefore, infectious; neither are they meteoratious. Dr. S. does not allow them to be contagious; and where, then, are they to be placed? Possibly there may be *but one specific cause* for typhus (as for small-pox), however generated, which, eliminated by the excretions, is again diffused in the atmosphere, and being a *morbid* animal secretion, is "contagion." The poison produced by decomposing organic matters, animal, vegetable, or both, and that produced by over crowding, &c., may be the same, since it produces like effects; and once generated, it is propagated by contagion; ergo, it is *infectio-contagious.* The question at issue between Prof. Smith and ourselves, is, whether or not this specific virus exists in the excreta of the patient, and the analogy of all other contagious diseases is in favor of the supposition. (See the quotation from Roche, p. 170.) Is not such elimination the very object of the action which results from its absorption? And may we not define contagion to be "the exhalation from the bodies of *the sick,* of the morbid poison by which was induced in them the disease under which they are laboring? Lastly, the poison of small-pox, &c., is imbibed; existing in the blood, it may be multiplied there indefinitely, and escape with the excreted secretions of the patient. But what is the proof of its being *secreted?* By what apparatus is this to be effected? Now, if this view be correct, what becomes of the distinction which Prof. Smith has established between "*secreted* poisons and foul *excretions?*" Again: admitting that it is secreted, must it not escape with the excretions; and if so, are not these "foul excretions" charged with this specific virus, which, escaping from them, is again at liberty to exert its specific contagion? How else is small-pox contagious, which D. Smith allows? and why should not fevers also be contagious, which he denies? Is not the virus specific, and its modus operandi the same?

subject and ample means of investigation, his decided conviction that fever is developed by contagion. Did none of his cases of typhus originate in the infection which Dr. Hudson supposes only to cause dothinenteritis? We can conscientiously say that we have twice seen the typhoid affection communicated; once by a man to his brother, who nursed him, both dying of the disease; once to a woman who had nursed a brother and sister recently arrived from Ireland, and affected with the ship-fever, and who also died with well-marked symptoms of muco-enteritis. We coincide with Roche in thinking that 'one fact does not destroy another,' and after one hundred thousand cases of plague, in which the disease shall not have been once communicated from one pest patient to another, let there happen a single instance in which the transmission is evident, and we are obliged to acknowledge that the plague is contagious, at least once in one hundred thousand times." "Now," he continues, "there are cases, much more numerous, in which it is impossible to explain otherwise than by contagion, the appearance of miasmatic diseases in certain localities, and among certain patients. Also do we generally admit the contagious property of plague and typhus, which offer the most striking evidences of it."

The same sensible writer, familiar with the fever of Paris, asserts its identity with typhus; "we see in them no difference, *save in the degree of the energy of the causes which produce either, and in the force of their symptomatic expression.* They are developed under the same influences." If so, both are contagious: both infectious. "If," continues Roche, "to this be objected that we sometimes see little epidemics of typhoid fever reign, which are far from having the gravity of larger epidemics of typhus, let us remark that the causes which give rise to typhus, though not differing from those of the typhoid fever, act nevertheless with much more energy, under favorable circumstances, and upon large masses of predisposed individuals; and then, consequently, the disease must take a graver character than it can, except with difficulty, assume in the midst of our population." Here we have one reason for the greater mildness of our ordinary typhoid fevers, than when the graver disease happens to prevail; upon the dose and peculiarities of the same miasm and the predisposition on the part of the recipient, the state, to use the language of Andral, in which the poison finds the innervation and the hæmatosis, and not, as Hudson would have it, upon peculiar miasmatic causes, will depend the varieties observed in different cases of fundamentally the same disease. Morbid poisons must be absorbed in a certain dose to produce their effects. The miasms excreted in the typhoid fevers are less in intensity and amount than those of typhus; they vitiate less the surrounding atmosphere; they are disseminated in a larger extent of less vitiated air, the dose is not sufficiently strong to reproduce the disease, but it is not the less, *under favorable circumstances*, contagious, and a mild typhoid may even cause a severe typhus fever. But a concourse of circumstances seldom met with, are necessary to enable the miasm to act out of certain narrow limits, and hence incontestable instances of contagion are rare out of focuses of infection. "Typhoid fever," says Roche, "is sporadic typhus; typhus fever is epidemic typhoid fever." It would be better, we think, to say that the typhoid fever is endemic typhus, and that sporadic typhus is usually, though not always, the milder typhoid form of fever. A few words as to these strictly sporadic cases of typhus, which are now and

then met with. On what do they depend? Let us take, as an illustration, one which actually occurred within our own knowledge, in the person of a young gentleman twenty years of age, the son of wealthy parents, living in a splendid house, in one of our best streets, of correct deportment, having all the comforts and luxuries and none of the cares or anxieties of life, who died with typhoid fever and intestinal ulceration of the very worst form. Now here contagion could not have operated, nor the ordinary sources of infection. Did, then, the disease originate *ab interno*, from some moral impression, or from some functional derangement (not organic disease, as inflammation) inappreciable to the senses, but sufficient so to act on the blood and nervous system directly, as to induce the disease, or else to place the patient in a condition to be acted on by an infectious miasm existing in the atmosphere? for in one or other of these ways it must have occurred, since we know of no others. Is there such a miasm constantly existing in our atmosphere, which, like that of small-pox, measles, and scarlatina,* may act upon the organism at any moment, when predisposed by some cause, meteorations or constitutional, to feel its influence? Judging from the analogy of the diseases just mentioned, the specific cause of which is ever existent, may we not admit the constant existence of such a morbific agent? On referring to the City Inspector's report for the year 1842, we find that of 214 cases of typhus, there occurred several in every month in the year, though less frequently in the months of June, July, August, September and December, than in others. We leave the explanation of these mysterious occurrences to the reflection of the reader, not knowing, ourselves, in what way else to explain them; but we have seen several such, and so must all our brethren, actively engaged in practice.†

We have had frequent occasion, in the preceding pages, to allude to the distinctive differences between Fever and Inflammation; in other words, between Idiopathic and Symptomatic Fever. How do the latter become typhoid in the course of their progress? "Suppose," says Andral, "a case of gastritis, from taking tartar emetic, in which the symptoms are fairly typhoid. Is this typhoid fever? It is not, *in the order and succession of the symptoms.*" "Inflammation," says Chomel, is, when it alone (primitively) constitutes the disease." "In fevers," says Roche, "are none of those circumscribed lesions, confined to a single organ, as are seen in most other maladies." "Fever," says Southwood Smith, "is not inflammation, though in inflammation some of the phenomena are the same, *but the order in which they concur* is not the same, and this affords a clear and universally applicable mark of dis-

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* Sir G. Blane relates that a man sickened on board of a ship at sea, long separated from intercourse with the land, with scarlatina. The children of the Foundling Hospital in London, who have no communication with the exterior, often contract both measles and small-pox, and a case of the latter occurred in an individual in solitary confinement in the Milbank Penitentiary, who did not receive the disease by contagion from without. Contagion may then, as Dr. Hosack has said, be effected through the medium of the atmosphere, without the necessity for actual contact, or the agency of fomites. (Hosack on Contagion. Am. Med. and Phil. Reg. Vol. 2d, and in Trans. of Lit. and Phil. Soc. Vol. 1, cited by Prof. Smith.) And if this be true of measles, small-pox, &c., why not of typhus?

† The same question is asked in the Art. Contagion in the Cyc. of Pract. Med. in reference to scarlatina.

tinction between fever and inflammation. Invariableness of concurrence of a particular number of events, in a particular order, viz., 1st, derangement of the brain and nervous system, 2d, derangement of the circulating system (the humoralists reverse the sequence), 3d, derangement of the secreting and excreting functions, ending in morbid change, constitutes fever." Here we see what is meant by the abstract term, or, as Broussais would call it, the entity fever. It is the combination, in a particular order of sequence, of several phenomena constituting a morbid state which differs from primitive inflammation; and as this distinction is of indispensable necessity, and exists in nature, so the term fever, to express such a combination, is not only natural and indispensable in nosography, but of paramount importance in a practical point of view, and the objections made to it by Broussais are as ill-founded, as is the view which he has taken of its constantly symptomatic nature. "In inflammation," says Smith, in continuation, "the brain, &c., are not *first* affected, hence *the order of concurrence differs*, and inflammation therefore is not fever. Inflammation of the brain which becomes typhoid, offers an exception to this general law, but even here the typhoid symptoms are secondary in point of time, and thus, the order of concurrence becomes still the only and a satisfactory means of diagnosis."

To these considerations, let us only add that fevers have specific causes which inflammations have not, and that the analysis of the blood offers us distinctive differences. The points of diagnosis then are, 1st, the primitive occurrence of one or more local lesions, not arising from the specific causes of fever, as infection or contagion, but from sensible or epidemic meteoration (J. M. Smith), and 2dly, the order of succession, or concurrence of the typhoid symptoms, which are always secondary in point of time. Now in certain of the phlegmasiæ, as phlebitis, the typhoid phenomena result from the injurious effects of pus, circulating in the blood, upon that fluid, and secondarily, after the manner of injected poisons, upon the brain and nervous system. In other cases, the explanation of Alison may be admitted: "There are cases in which inflammation is fatal, by reason of some part of the effusions to which it gives rise, being mixed with the blood and acting on the footing of a poison." This includes other effusions than pus; and if we add "and secretions," we may include the typhoid phenomena which result from absorption of urea in certain affections of the kidney, &c. But in other cases, which cannot by either of these modes be accounted for, we have but two alternatives; the one to suppose the intercurrent or previous action of the typhoid miasm, which we have suggested constantly to exist latently in the atmosphere;* the other to admit that the continuance or degree of

* In this idea we are sustained by Roupell, who says, "We must look for some active special and specific virus. The germ of this disorder (typhus) will not be often wanting, for in some of its various forms, it seems to be almost always in activity in some portion or other of the world, and is readily communicable by the atmosphere." He prefers the idea that Typhus "depends upon a certain definite poison *which is always more or less in operation*," to supposing that it is generated anew. (Short Treatise, &c., 37.) We cannot find a better place in which to introduce the peculiar views of this intelligent author, on the subject which lies now before us. "Both in typhus, and in the peculiar form of typhoid fever which results from injuries" (and inflammation also?) or as Dr. R. elsewhere says, "in any fever, inflammation of the capillary vessels, and the consequent admixture of morbid secretions from the inner membrane with the blood, is the cause of the most alarming symptoms which arise, as well as of the secondary lesions."—p. 70. If this view cannot be considered as

vascular action and nervous irritation, and the derangement of function, has at length caused "the blood and nervous centres to participate in the disease" (Andral); in other words, to experience that modification which produces the phenomena of the ataxo-adynamic state. The first of these views, though possible, and even probable, is as yet speculative; the second is universally admitted, but the *quo modo* it is not easy to assign. There are facts in the history of certain of the phlegmasiæ, when occurring epidemically, as influenza, which has a meteoratious, and Cholera Asiatica, which is of infectious origin; and dysentery, erysipelas, puerperal peritonitis, which appear to be also contagious, which show that like fevers, they must originate in specific causes, and tend to assimilate them most to the latter class of diseases, if indeed they be not typhoid fevers in disguise.* Continued and remittent fevers originally simple, which become typhoid, we suppose to have had an infectious origin, and to display in their latter stages, the influence or expression of the multiplied morbific cause, aggravated by the continuance of vascular and nervous irritation, upon the economy. If this be not so, the causes previously assigned must be resorted to, in order to explain them. "We do positively know that the mild forms of fever become severe, in consequence of the supervention of inflammation in certain organs." (S. Smith.) The dose of the poison may have been too feeble to act without, or latent until developed under the influence of fresh causes; such fevers are not typhus, though the exciting cause is perhaps the same, but become in their progress, typhous or typhoid, according to the severity of the symptoms, and toward the adynamic or ataxic state, all *true fevers* probably naturally tend; for to produce even slight fever, the morbific cause must have acted, in some degree at least, upon the innervation or the blood.

This leads us to remark that, whereas the peculiar characteristic of typhus fever is to be found in the state of the brain and nervous system, the ataxo-adynamic condition must, to constitute it, occur in the very beginning, or at least very early in the progress of the case, in more or less degree. According to the dose of the poison, it may vary in force, but it may perhaps be said with truth to be never wholly absent. It is this *early prostration not referable to local causes*, which constitutes the great distinguishing mark between the idiopathic and the symptomatic fevers, and although a case of simple continued fever does not merit the appel-

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demonstrated, it is at least ably and ingeniously urged at some length in the work cited, which we consider as a valuable epitome. We cannot discuss the question, but were it admitted as universally true, we might wonder that the typhoid state in these diseases is not of even more frequent occurrence than it is. The theory is not well adapted to cases of Typhus without local lesion.

* Cusack, in a paper on puerperal fever, has expressed himself favorable to the opinion that the infection of Typhus is a source of puerperal phlebitis. Dr. H. Mc Adam (Cyc. Peritonitis) says the same. Armstrong (Morb. Anat. p. 96) says that puerperal fever is sometimes genuine typhus occurring in the puerperal state, and Dr. Stokes participates in this opinion. M. Gasc, the translator of Hildenbrand, is equally convinced of the fact, and Dr. Marsh (Dub. Hosp. Rep. Vol. IV. p. 121) says, on the authority of Dr. Johnson, that the ward maids of the Lying in Hospital caught Typhus fever from the patients affected with puerperal fever. (Roupell, p. 73.) If these facts be so, the morbid poison generated in each disease, as well as the original specific cause, is identical; each is contagious, as the puerperal fever has long been suspected to be. The suggestion which we made as to the nature of the dysentery contracted from typhus patients, receives a strong corroboration from these facts, and an argument is supplied to the supporters of the contagion of Typhus.

lation of typhus, it is from the very nature of its cause, a typhoid fever, even when the signs of adynamia scarcely reveal themselves to the eye, and tends constantly, for the same reason, to a state of greater vital depression.* Let us add, that in cases of typhoid inflammation, we cannot refuse to admit, with Broussais (if we deny the inter-current action of a morbid poison), that such inflammation is the cause of the ataxo-adynamic condition. The error of the physiological school consists in referring such condition always to inflammation, in the idiopathic fevers, while they overlook the deleterious agency of the *specific cause* in exciting both the inflammation and the adynamia. Inflammation is Broussais's entity as much as fever is ours, and every objection which he has urged against our exclusiveness, may, with equal force, be asserted of his own, while truth, we venture to assume, is upon our side.† As to the exanthemata,

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* This simple continued fever is the synochus of authors. "There can be no doubt of the existence of every intermediate gradation, between the common forms of fever (synochus) and typhus, so that it becomes a matter of nicety to discriminate to which class a particular case belongs. Sometimes we find indeed the one form passing into the other; more frequently mild fever lapsing into typhus." (Cyca. Fever.) We have seen typhus of considerable intensity excite a synochus of several weeks' duration in a person exposed to the contagion. This shows that, as Copland remarks, "*the fevers cannot be said to differ specifically from each other.*" (Dict.) The same author states that the chief difference consists in the sthenic vascular reaction, in the early part of the period of excitement in the former. Hildenbrand says that "the miasmata which produce typhus fever may arise at all times," and agrees with Blane and Pringle, that air overcharged with human exhalations is a cause. "Then," he says, "it has the power of self-extension, *and every fever may pass to the state of typhus.* This passage suggests the idea of typhoid symptoms occurring in the course of simple synochus, by infection from an impure atmosphere surrounding the patient. Is this the only cause, or must we admit what it also suggests, the inter-current action of the specific poison always existing in the atmosphere, or, thirdly, conclude that all simple synochi which become typhoid, originated under the influence of that poison? We incline, as has been said, to this latter opinion, thinking that it is both the more consistent with analogy and the more simple one. Lastly, must we, like Southwood Smith, consider the supervening inflammations to be in them the cause of the typhoid phenomena? To this we object the greater probability that they are but effects of the specific cause. Dr. Chambers, in his lectures (Med. Gaz.), not only classes together the varieties of typhus and the synochus and synocha of Cullen, but appears to consider them all analogous to remittent fevers, and ascribes their origin to some such epidemic or endemic influence as gives rise to the marsh fever.

† It is not that the fact is unknown to them, for in the 317th Prop. he says, that "typhus fevers are gastro-enterites from a miasmatic poisoning; that is to say, by putrid gases, often complicated with some other inflammation, and especially those of the cerebro-spinal apparatus, &c." But to show that he misconceives the influences of the poison which he here indicates, we find him elsewhere saying, "we know very well that the alterations of the blood and other fluids, on which we have made many researches, &c., are *consecutive*, at least for the most part, to the inflammation indicated." Still more remarkably in point is the following passage:—"They add (the physiological school) that the absorption of putrid matters, from the inflamed digestive tube, produces an infection of the humors, which contributes, with the irritation of the brain and spinal marrow, to develope the debility, fetidity, nervosity, and all the alarming apparatus of symptoms which constitute typhoid fevers, and *even* true typhus *par infection*, of the worst degree, for they insist that *the infection exerts its principal action on the digestive tube* (affecting sometimes the follicles, sometimes the mucous membrane itself, the latter constant, but the former not), and modifies the functions much as they are in sporadic typhus fever."—(2nd Exam., p. 220.) Even if this were so, the inflammation is only consecutive. "Acute gastro-enterites, which are exasperated, all arrive at stupor, vertigo, &c., and represent what are called putrid, adynamic, typhus fever."—Prop. 138. And Boisseau (Pyret. Physiol., p. 292, Am. ed.) says, that "it would be wrong to conclude that M. Broussais regards typhus as a disease *sui generis*. When the period of sedation, which is always of very short duration, is over, he sees

the supervention of the typhoid state is due not less to the action of the specific cause on the blood and innervation, than to the causes already assigned in relation to the phlegmasiæ, but to explain the reason why cholera infantum, which is an epidemic follicular enteritis, depending likewise on a specific cause, a fever or an inflammation, which the reader will, never does display truly typhoid phenomena in its progress, we honestly confess that we can assign no plausible conjecture. With respect to phthisis, one reason at least is obvious; it depends not upon miasmatic influences. We had intended to have presented the conclusions at which we have arrived on all the points connected with the subject under consideration, in the form of corollaries; but we have protracted our essay to such an extent, as to render it impossible.

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nothing in the disease but a phlegmasia." But what causes this "*period of sedation?*" In this work, every page of which abounds with controvertible statements, we have these erroneous views set forth in every conceivable variety of form and expression. "All diseases to which we give the name of fever are primitively local." "To behold in fevers only an effect, *sui generis*, invading the whole economy, is totally at variance with the actual state of pathological anatomy and physiology." Boisseau makes six varieties of fever. His "inflammatory" fever can be nothing but inflammation, ending in typhoid symptoms. His "gastric" fever includes simple bilious derangement, not always febrile, indigestion and dyspepsia, and cholera morbus! His "mucous" fever is an inflammation or irritation of any of the mucous surfaces, and therefore not really deserving of a separate classification from inflammatory fever. His "adynamic and ataxic" fevers are typhus, of which, however, he makes a sixth class. To the miasmatic causes of adynamic fever, which he correctly specifies (considering it contagious), we find him adding, "abuse of mercury and alkalies, excessive evacuations, debauches, extreme fatigue, exhaustion, inaction, prolonged watching and study;" as if these were alone sufficient to induce the disease without the operation of miasmatic causes.—p. 173. "The influence of these emanations is primitively local."—174. And still more extraordinary is the following: "Do deleterious emanations, &c., which provoke gastro-enteritis, determine the adynamic symptoms, by transporting their molecules to the heart or brain (not the blood, Aut.), or only by the irritation they occasion in the mucous membrane? The conveyance of molecules to these viscera, not having been rigorously demonstrated, *cannot be admitted*, and no pathological or therapeutic principle can be established upon a mere presumption. It is better to leave a chasm in the science than to supply the deficiency by error, or what is but little better, by supposition."—176. As if the local and gastro-enteritic theory of fever were not quite as erroneous, or at least equally suppositious. To show the futility of his subdivisions of fever, we find him saying, "the reader must perceive that in giving a description of the adynamic fever, I have retraced the history of the *synochal*, gastric and mucous fevers." His objections to the "essential" theory of fevers could be easily answered, and consist in mere incorrect reiterations of the local origin, although he admits that "essential adynamic fever, if it exist at all, is not only rare, but excessively so;" so that, after all, it is not wholly denied. But he does not agree with Broussais in thinking that "all fevers, even all those called essential, can be attributed to gastro-enteritis." "If by fever be understood an unknown morbid state sui generis, &c." Now no one, of what may be called, in contradistinction, the philosophical school, contends that fever is an *unknown* morbid state; on the contrary, it is a known morbid state, induced oftenest from known causes, although indeed the *modus operandi* of these causes in inducing it may yet be doubtful, both as to where they first operate, and how the morbid action therein is ultimately effected. This is one among many specimens of the fairness of Broussaisan criticism on cotemporary doctrines. Without "unwholesome provisions, dampness, and depressing emotions," *the typhous miasm*, he says, *is innoxious*, and by which alone typhous epidemics may be originated. "If it is ever demonstrated," he says, "that these exhalations really do penetrate into the veins, and are conveyed into the whole arterial system, &c.; but there is no certainty that they are absorbed, and their morbification *generally* manifests itself first on the gastro-intestinal mucous membrane."—300. It is really surprising how the human mind may be blinded by the influence of preconceived opinions, and men of sense consent to resort to disingenuousness in the propagation of error and untruth.

The reader cannot have failed to perceive that the settlement of the various points we have been discussing, must have a most important bearing both upon correct treatment and the public hygeine. The question is, whether, on the one hand, we are to attend solely to the local inflammations which complicate fever, disregarding the adynamic symptoms, and regarding them as indicating, not weakness, but "an increase of force," and the mere consequences of the local lesions; or whether, on the other, we are to direct our chief attention towards disembarrassing the system of the morbific principle, sustaining the strength during its elimination, opposing to the evidences of prostration the action of tonics and diffusible stimuli, and modifying the progress of the local lesions by a modified antiphlogistic treatment during the natural course of the disease, so as to prevent them from passing into irremediable and fatal changes of structure. It must be evident that a correct understanding on these points, must constitute the very basis of a safe and successful mode of practice, which can be founded only on a just appreciation of the cause and nature of febrile diseases. Believing, from the conclusions at which we have found it unavoidable, in view of the facts, to arrive, that the latter is the only course which can be sanctioned by a just induction from the premises, it results: 1st, That the first indication in the treatment of all miasmatic maladies, consists in freeing, as much as possible, the economy from the presence of the morbific principle, or poison, as a means of which, bleeding, at an early stage, and under judicious restrictions, according to particular cases, holds the first rank. 2d, That the second indication is to combat the effects of the morbific agent on the principal organs; effects sometimes asthenic, at other times and oftenest, inflammatory, and, in some cases, lastly, participating in either nature, by means differing, consequently, according to the nature of these effects. 3d, That an attempt must be made to fulfil both these indications at the same time.* 4th, That the treatment cannot be the same in all the phases of these diseases. 5th, That to remove from the place from whence they originate, is the only means truly prophylactic of these affections. 6th, That patients should, as much as possible, be taken out from and disseminated beyond the focus of infection; and 7th, That we need not despair of one day finding an antidote to each of these toxical agents.†

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* "Two great indications—one to discover and remove, or modify, the local inflammations; the other to support the patient's strength, so that he may not become exhausted during the progress of the disease, and thus lose his chance of the spontaneous favorable termination." Stokes (Clin. Lect., Am. Ed., 1837, p. 328).

† A few words as to the nomenclature of Fever. It is certain that there exist in nature, fevers which are intermittent, remittent, and continued. Of the last, there are at least two forms. The one, whatever be its original cause, and we have hinted at its specific character, is not always, *ab initio*, distinctly typhoid; this is the synochus. It may be mild (mitior); it can hardly be severe (gravior) without trenching on the second form, in which the adynamo-ataxic state is, from the first, the distinguishing characteristic. This is typhus. It, too, may be designated by the terms mitior and gravior, according to its severity; and when that peculiar lesion can be diagnosticated with certainty during life, which is not always possible, even when it exists, it may be both convenient and scientific to append to either variety, the epithet *dothinenteriticus*. But we protest against the making this a separate disease from typhus, and the designating it by a special appellation. The symptomatic fevers have, of course, no place in this arrangement. Whether, when synochus becomes typhoid, it be not proved to have been typhus from the beginning, is a question, the

Here we conclude our essay; sheltering ourselves, if censured for its length, behind the extent, the interest and the importance of our subject. A similar resumé of cotemporary opinions is not furnished, so far as we know, by any existing monograph on the subject of the disease of most surpassing interest and importance in the whole range of human maladies; and it has cost time and research, nay, reflection, in its preparation; nevertheless, we are but too sensible of its imperfections. Little, comparatively, has been done, and much remains behind; but our inquiries, we trust, may serve at least to excite consideration, and supply the sources for further investigation. The answers which we have supplied are to be regarded in no other light, than as humble attempts at an approximation to truth, and often, doubtless, erroneous ones. To have stated the opinions, or searched the pages, of *every* writer whose works bear upon the subject, would have been infinitely too comprehensive; one inquiry gives rise only to another, book refers to book; and, in short, to pursue perfection in medical literature is, to use the language of Johnson, "like the first inhabitants of Arcadia, to chase the sun, which, when they had reached the hill where he seemed to rest, was still beheld at the same distance before them." The attempt, however, cannot be useless; nor is the object unscientific, for art, as Roupell has prettily said, "then alone rises into science, when, besides meeting effects, *we search into causes*, and when administering appropriate remedies, we can give a reason for their use and explain their operation." The inquiry involves many logical niceties, but they are necessary; most of the more recent standard authorities have been consulted, and those conclusions deduced which seemed naturally to follow from the premises. Nevertheless, the ultimate solution must be left to the judgment of the reader, of a question about which it is of vital importance that unanimity of sentiment should prevail. Our aim has been to direct, but not to compel his convictions. Reflection is the first step toward the attainment of truth.

ART. IV.—*Remarks on a New Method of Operation for Stone in the Bladder, accompanied by an illustration of a new instrument.* By ALFRED C. POST, M. D., Surgeon to the New York Hospital, &c.

THE operation of lithotomy has always been justly regarded as one of the most formidable in surgery. The dangers of the operation are to be chiefly ascribed to one of two opposite causes, viz., an incision into the

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solution of which is left to the judgment of the reader. There is a great deal both of truth and good sense in the following remark of Roupell. "A more rational division of the class of fevers can perhaps be made by simply dividing them into symptomatic and specific. For no febrile action, or actual fever, will be produced and continue, unless there be such a cause as disturbed action in some part of the system, to excite the symptomatic fever; or unless there should be *some specific influence* in operation in the other. Specific influences are either of atmospheric, vegetable or animal origin, or the two last combined." Auth.

bladder of too great or of too small extent. If the incision be too extensive, or, in other words, if it be carried beyond the bounds of the prostate gland, there is danger of hemorrhage from the prostatic plexus of veins, and of urinary infiltration into the sub-peritoneal cellular tissue of the pelvis. Death may ensue from either of these accidents. If the incision extend much beyond the limits of the prostate gland, it may even involve the internal pudic artery. If the incision be too small, the laceration and contusion to which the neck of the bladder and the prostate gland will necessarily be subjected during the extraction of the stone, will be likely to give rise to severe and even fatal inflammation. To ensure an incision of a definite size into the neck of the bladder, within the limits of the prostate gland, is one of the great desiderata in the operation. In the ordinary mode of operating with a bistoury, the extent of the incision into the neck of the bladder is a matter of much uncertainty, as the incision is made with a narrow instrument, at a considerable depth from the surface, and beyond the view of the operator. To make the incision of a definite extent, cutting gorgets of different forms have been contrived, and there could be no question of the superiority of these instruments to the common bistoury, if they could be conducted with certainty along the groove of the staff into the bladder. But from their breadth, there is much more difficulty in guiding them safely into the bladder, and there is danger of their slipping so as to wound the internal pudic artery, or the rectum, or to penetrate into the cellular tissue between the bladder and rectum, or even into the peritoneal cavity. Great caution is, therefore, required in the use of these instruments; when they are guided by skilful hands, they may undoubtedly be employed with safety and advantage, but without suitable caution, their use is very dangerous. The Prostatic Bisector of Doctor Stevens,* which acts on the principle of a double-edged gorget, has the advantage over the common cutting gorget, that it cuts on both sides of the prostate gland, and thus secures a larger opening into the neck of the bladder without any additional hazard to the patient. But the principal objection to the common gorget, viz., its liability to slip, applies also to Doctor Stevens's instrument, although from its introduction along the median line, the danger of slipping is not so great as in the lateral operation. But from the breadth and thickness of the instrument, considerable force is required to conduct it into the bladder, and it is liable to slip into the cellular cul-de-sac between the bladder and rectum. This accident happened to myself in one instance, in operating with this instrument upon the dead subject; the beak of the instrument slipped from the groove of the staff, and entered the bladder behind the prostate gland, and between the vesiculæ seminales. I removed the stone through the opening thus made, and only detected the accident on a subsequent dissection of the parts.

To obviate the inconveniences and dangers attending the modes of operating which have hitherto been resorted to, I have devised a new method, which I venture to lay before the profession. The method to which I allude is a modification of the bilateral operation. I propose to make an external crescentic incision through the perineum on both sides of the median line, the concavity looking toward the anus, according to the method described by Celsus, and performed in modern times by Dupuytren, of Paris, and by Doctor Stevens, of New York. I then make

* See Lectures on Lithotomy, by Alexander H. Stevens, M. D. New York, 1838.

a free incision into the membranous part of the urethra, upon a grooved staff, after which the staff is withdrawn, and the remaining part of the operation is performed with a new instrument, which I have contrived for the purpose, and which is designed to guard against the uncertainty and danger attending the use of the instruments which have hitherto been employed. My instrument consists of a straight steel rod, eleven inches in length, and of the size of a bougie No. 1, having a flat ivory handle at one extremity, and a small rounded button at the other extremity. Over this rod slides a canula of the size of a bougie No. 10, and half the length of the rod. The distal extremity of the canula is tapered off to the extent of three quarters of an inch, so as to form a beak which projects beyond the blades; immediately behind this beak, are two blades, which are inserted into grooves on the sides of the canula, in such a manner that they can easily be taken out and reinserted. There are four sets of blades of different breadths; the largest make an incision into the neck of the bladder of about one inch and a half in width, and the smallest about three quarters of an inch. The proximal extremity of the canula has a small ivory handle adapted to it, by means of which the canula is made to slide upon the rod. The incision into the membranous part of the urethra having been made, as already described, the extremity of the rod is passed through it into the bladder, the canula being drawn back towards the handle of the rod; the beak of the canula is then passed along the rod into the urethra, and is thus conducted into the bladder, the blades making an incision of a definite extent on each side of the prostate gland. By the use of this instrument, a degree of certainty is attained as to the situation and extent of the opening into the bladder, which cannot be acquired by the employment of any other instrument. It appears to me, therefore, that this method of operating must be simpler in its execution, and safer in its results, than any other method. I have not yet had an opportunity of testing the operation upon the living subject; I have tried it upon the dead subject, and have found that it makes a very satisfactory incision into the neck of the bladder.

The accompanying cut will render the description of the instrument more intelligible to the reader.

ART. V.—*Further Thoughts on the Hypotheses of the Chemico-physiological School.* By CHARLES CALDWELL, M. D., Professor of the Institutes of Medicine and Medical Jurisprudence, Louisville, Kentucky.

No. II.

IN every controversy, whatever be its character or general design, it is indispensable to a conclusive and satisfactory result of it, that a clear and definite conception be formed, and held constantly in view, of the end or ends which each party to it is struggling to attain.

To the truth of this proposition, observation and experience, in concurrence with reason and common sense, abundantly testify. Hence it is the interest, as well as the duty of every controvertist to conform to it in practice. It is in a spirit of obedience to it, therefore, that I now state, that the end aimed at in the present controversy, is the solution of the question—Whether chemistry, under a correct interpretation of the term, be essential to, or at all concerned in, the formation and economy of living organized matter? And this question involves another, equally abstruse and difficult to be resolved—Do the primary elements of living organized matter—carbon, oxygen, hydrogen, and azote—contain of themselves, when in an isolated condition, the properties requisite to the formation and functions of such matter? This question, moreover, includes a third, equally as difficult of solution as either of the two preceding ones, and is as follows—In case the elements, just enumerated, do not, of themselves, when uncombined with one another, or with some other substance, possess the properties *required*, can those properties be imparted to them by any sort of juxta-position, arrangement, or combination, which they can be made to receive? Must not the new properties referred to, be produced in them, if produced at all, by their union with some other substance possessed of great peculiarity and *formative* power?

Unless the first three of the foregoing questions admit of a correct *affirmative* answer, then is the main prop of the hypothesis of the chemico-physiologists overthrown and demolished. And of that event the necessary consequence will be, that the fourth question also must be answered *affirmatively*, which will establish the doctrines of the vital physiologists.

If I am mistaken in any of these positions, I will receive a correction of my error by my opponents as a favor, and will cordially thank them for the service they will have rendered me.

True, by the *chemical* union of the fundamental elements of organized matter, compounds are produced, possessing new and striking properties. Oxygen united to carbon, forms carbonic acid—to hydrogen, water—to azote, nitrous acid—and the product of the union of azote and hydrogen is ammonia. And these compounds, I say, possess properties widely different from those of the elements which compose them. But they are still the properties of dead, inorganic matter, as immeasurably different from those of living organized matter, as death is from life, or entity from nonentity.

I well know, however, that neither of the questions just proposed can be, in the abstract, directly and definitively answered. They relate to matters too recondite and obscure to admit of such an issue. My *chief* resource, therefore, in the present discussion, is, to throw on the subject all the light I can, by collateral considerations. But that is not my *only*

resource. I shall be able, if I mistake not, to strengthen my own views by exposing the *inherent* and essential weakness of those of my opponents, which are, in most respects, the *opposite* of mine. If I can make it clearly appear that those writers have virtually contradicted themselves, by assuming at different times, for their own special purposes, positions inconsistent with each other, and employed as arguments to sustain those positions, conjectures, and presumptions, instead of facts and inferences justified by facts—if I can do this and thus convict them of loose and sophistical reasoning, whatever effect the measure may produce on my opinions, it will doubtless be highly prejudicial to theirs. It will confirm against them one or more of the three following charges, or all of them united; a want of argumentative ability—a looseness and negligence in inquiry and discussion—or a want of solid and suitable matter for argument and defence. In either case, the result, if duly appreciated, cannot fail to operate to the discredit of their hypotheses, and will detract in an equal degree from their own authority and influence, as physiologists and controvertists.

That thus unsound and inefficient are the writings of the chemico-physiologists, on their favorite subject, I shall endeavor to demonstrate. And I shall commence my disquisition with an exposure of some of the errors of Dr. Roget. Nor, open and palpable as those errors are, do I anticipate much difficulty in the attainment of my end.

In the first American edition of Roget's "Outlines of Physiology and Phrenology," page 14, is contained the following correct definition, or rather delineation of chemistry, and of the class of the sciences to which it belongs:

"Chemistry, which is concerned with the changes of composition in bodies, resulting from the mutual action of their particles at insensible distances, ranks also with the *sciences treating of the properties of inorganic* matter, and of which the assemblage constitutes what are *more correctly* termed, in the present day, the *physical* sciences."

The view of chemistry presented in this paragraph, I say, as far as it extends, is correct. A single word more would have rendered it unexceptionable, and consistent with the views of the vitalists, and might have spared its author no little perplexity which he afterwards experienced in struggling to extricate himself from the entanglements of chemico-physiology. Had he said that chemistry "ranks with the sciences relating to the properties of inorganic matter" *alone*, the work would have been done, and no opening left for subsequent cavilling or trouble.

The word *alone*, if thus added, renders the doctor's definition of chemistry perfectly accordant with the definitions of it given by some of the greatest masters of the science; by whom it was confined within its *proper sphere*, and never prostituted to purposes foreign from its nature.

Nor is the preceding the only paragraph of his "Outlines," in which our author speaks correctly of the objects, limits, and relations of chemistry. The following clauses are to the same effect:

"The phenomena of *living beings* have a totally *different character* from the *changes* which take place in *inanimate* matter."—(P. 15.)

They do and *must*, therefore, proceed from causes and modes of action equally different. Again:

"Thus, while the sciences of inorganic matter are founded on the relations of cause and effect, physiology takes cognizance more especially of the relation of means to ends."—(P. 17.)

"The laws of chemistry apply also, *to a certain extent*, to the changes which are going on in the living system; but, in tracing the operation of these laws, we soon become sensible of the *apparent* interference of other principles, which *seem* to control the ordinary chemical affinities, which the same kinds of matter are found to exert when deprived of life. * * * Here, then, we are forced to recognize the existence of *new and unknown powers peculiar to and characterizing the living state.* * * * * Here, then, we perceive a sensible deviation from the course of phenomena exhibited by inorganic matter; and we are forced to recognize the existence of new and unknown powers, peculiar to and characterizing the living state. * * * * Powers of a similar kind are exhibited in the phenomena of vegetation; they *seem*, therefore, to attach to vitality in all its forms."—(P. 58.)

Such are some of the sentiments and representations of Dr. Roget; and extracts from his "Outlines," to the same purport, might be greatly multiplied. Indeed, so deeply is the doctor imbued with the spirit, and so thoroughly penetrated by the truths of sound vitalism, that his continuing a nonconformist to the doctrine is matter of surprise, not to say of astonishment, to many of the readers and admirers of his works. At times he is all but a proselyte to the *true faith*, and seems to be in the very act of completing his destiny. But, in the next moment, as if attracted by an enchantress, or repulsed by a spectre, he turns his back on the land of promise, and not only longs for the "flesh-pots" of chemico-physiology, but indulges in them to satiety. And he defends his selection of mental fare with such cobweb sophistry, as sheds its blight on the following paragraphs, and characterizes him as what the world calls an *ingenious* and *plausible* rather than a *sound* and *powerful* reasoner.

"However the laws which regulate the vital phenomena may appear, *on a superficial view*, to differ from those by which the physical changes taking place in inorganic matter are governed, still a more profound investigation of their real character will show that, when viewed abstractly from the consideration of final causes, there is really no essential difference between them, either as to their comprehensiveness, their uniformity of action, or the mode in which they are to be established, by the generalization of particular facts."—(P. 63.)

Once more:

"It may in like manner be contended, that the affinities which hold together the elements of living bodies, and which govern the elaboration of organic products, are the *same with those which preside over inorganic compounds;* and that the designations of *organic* and *vital affinities* are expressive only of peculiarities attending the circumstances and conditions under which they are placed, but do not *imply any real difference in the nature of the powers themselves.*"—(Ibid.)

When I contemplate Dr. Roget in his entire character, which, both intellectually and morally, I know to be one of great respectability, I am filled with amazement at his having written and published the two last-quoted paragraphs, after having been the author of the three or four preceding ones.

If there be in existence any two books whose contents are more unequivocally contradictory of each other, than those two sets of paragraphs, I am ignorant alike of their authorship and of the language in which they

are written; for I have never beheld them. To make good this statement, I shall here array in full contrast with each other, side by side, or rather consecutively, a few of the mutually contradictory clauses.

"The phenomena of living beings have a *totally different character* from the changes which take place in inorganic matter."

"Here, then, we are forced to recognize the existence of *new* and *unknown powers, peculiar to* and characterizing the living state."

That these two sentences are samples of sound and genuine vitalism, will not be denied. Nor is it less certain that the two following ones are directly the reverse—the unadulterated essence of chemico-physiologism.

"A more profound investigation of their real character" (the laws which regulate vital phenomena) "will show, that, abstractly from the consideration of final causes, there is really no difference between *them* and those by which the *physical changes taking place in inorganic matter* are governed."

"It may, in like manner, be contended, that the affinities which hold together the elements of *living bodies*, and which govern the elaboration of organic products, are the same with those which preside over *inorganic* compounds."

On the plain and positive contradictoriness of the substance of the two latter extracts to that of the two former ones, comment would be useless. The very presentation of them to the reader must conclusively evince to him, that on the subject of vitalism, its causes, and laws, Dr. Roget is as irreconcilably at war with himself, as he is with the vitalists in the two latter clauses. And I need hardly add, that a controversial writer is never so irretrievably overthrown, as when he falls the victim of his own inconsistencies.

I have alleged that the logic resorted to by Dr. Roget and his fellow-members of the chemico-physiological school, in support of their hypothesis, is unsound and sophistical. That instead of facts and established truths, those writers employ, as premises, conjectures, suppositions, and anticipated and contingent events, whose occurrence, not legitimately deduced or deducible from either precedent or probability, is but presumptive or fictitious; and that thus their entire scheme of argument and discussion, instead of being solid and conclusive, is visionary and deceptive.

This charge, under any circumstances, is a serious one; and, by being preferred against scholars and philosophers of rank and standing, it is, in no small degree, aggravated. It belongs to me, therefore, to endeavor to make it good. Nor do I deem the effort either difficult in its nature, or doubtful in its issue. The end contemplated can be easily attained by a brief comment on the two following paragraphs, a portion of one of which has been already quoted.

"It may, in like manner, be contended that the affinities which hold together the elements of living bodies, and which govern the elaboration of organic products, are the same with those which preside over inorganic compounds; and that the designations of organic and vital affinities are expressive only of peculiarities attending the circumstances and conditions under which they are placed, but do not imply any real difference in the nature of the powers themselves. If our knowledge of these circumstances and conditions were complete, their identity would be at once revealed to us; but until that period, which must be very far distant, has arrived, we must be content with gathering a few indications, which

occasionally break out from the clouds of mystery in which the subject is obscured, of the similarity of operation between the two apparently contending powers, the ordinary chemical and the extraordinary vital affinities. Every fresh discovery in animal and vegetable chemistry, by showing the mutual convertibility of organic compounds, adds to the number of those indications. Hence it becomes every day more and more probable that the forces immediately concerned in the production of chemical changes in the body are the same as those which are in constant operation in the inorganic world; and that we are not warranted in the assertion that the operations of vital chemistry are directed by distinct laws, and are the results of new agencies.

"We are therefore led to the conclusion, that the vital properties are not, as it is commonly expressed, superadded to matter in the process of organization, but are the result of the material constitution, that is, of the peculiar *combination and arrangement* of the ultimate molecules of the organized tissues, which call out and develope the properties previously existing in those molecules, but which cannot be effective unless these circumstances exist."

My first remark on these passages is, that they are of a tenor so conditional, suppositious, and conjectural, half mystical and obscure, that it is exceedingly difficult to form a clear and definite conception of them, and therefore all but impossible to offer a lucid and satisfactory comment on them. The vacillation and indecisiveness of their character plainly indicate that Dr. Roget, when composing them, felt a consciousness that he occupied a very doubtful and hazardous position, and was engaged in an enterprise in science too deep and dark for his powers of penetration and research (though he is neither dull-sighted nor shallow-minded), and too ponderous for his mental strength (though he is far from being obtuse or feeble in intellect). From the beginning to the end of his struggle, he presents a dubious, wary, and *non-committal* aspect.

He does not utter a single intrepid or manly thought, but expresses himself with the cautiousness, not to say timidity, with which an irresolute individual moves along his path, when thick darkness is around him, and near to him (he knows not on which side) is a dangerous precipice.

The Doctor seems anxious to be thought sagacious, profound, and all but prophetically wise; yet does he shrink, I say, from making a bold and vigorous effort for the attainment of his end. Did I not deem him too honest and high-minded to be capable of descending to artifice or finesse, I would feel authorized to suspect him of pretending to more knowledge, deeper research, and a wider range of thought, than he actually possesses. This semi-suspicion has been excited in me by the fact, that his preciseness of manner, and the wariness of his phraseology, greatly surpass the accuracy of his logic, and the correctness of his decisions.

But, notwithstanding the general obscurity of the preceding paragraphs, light enough emanates from a few spots in them to disclose some of our author's hypotheses. Of these, therefore, I shall now proceed to speak. His statement is sufficiently intelligible, when he says that the

"Designations of organic and vital affinities are expressive only of peculiarities attending the circumstances and conditions under which they are placed, but do not imply any real difference between the nature of the powers themselves and the nature of those that preside over inorganic compounds."

This assertion, I say, is easily understood. It means, that the same affinities or forces which bring together and hold together a piece of marble, or a nodule of flint, bring and hold together that important muscle, the human heart, and that still more exalted viscus, the human brain.

Nor, when fairly presented in all its nakedness, will any enlightened physiologist on earth, nor any other sensible man, unless under some perverting hallucination, believe the position.

I cannot persuade myself that Dr. Roget has ever deliberately and closely scrutinized the subject on which he has here discoursed, else could he never have fallen into an error so gross and glaring. By a brief and simple disquisition, this may be demonstrated.

During life, the muscles are under the influence of "vital affinity," or attraction, which gives them the chief portion of their strength. But death, when complete, destroys that attraction, as well as the degree of strength which it imparted. Nothing now remains to hold those organs together except the attraction of dead matter; and whether that be chemical or adhesive, or both united, is of no moment in the present discussion. It has comparatively but little influence on the tenacity of the muscles.

These organs, when dead, do not possess, perhaps, a tithe of the strength which marks them while living. Hence the ease with which a muscle may be lacerated; and hence, also, its tenderness as an article of diet, when its vitality is completely extinguished. In a stag that has been long and fiercely pursued by hounds, until, after a preternatural bound over a stream or a fence, he falls instantly dead, life is entirely extinguished, the muscles are easily torn to pieces, are tender as aliment, and cannot, by irritation, be made to contract; nor, in consequence of its thorough exhaustion of vitality, does the blood coagulate. In this case, the carcase, for the same reason, rapidly putrifies. Of animals destroyed by lightning, or by a large dose of virulent poison, the same is true, from the same cause.

Of some of these truths, those *devotees to appetite*, usually, but improperly, denominated *epicures*, are informed, without knowing the philosophy of them. They, therefore, before having them prepared for the table, allow their venison, and other sorts of game, to run to the very verge of putrescence. In other words, they wait until vitality has utterly *deserted*, and chemistry begun to *invade* them. But a proof more forcible and striking than either of these, that vital attraction is something *real* and *substantial*, and not a mere *circumstance*, either accidental or factitious, remains to be mentioned.

During life, the gastrocnemei muscles are vastly stronger than the tendo Achillis, to which they are attached. Hence, by a violent exertion of the leg, *they* not unfrequently rupture *it*, while *it* never, in such a case, ruptures *them*, because it is the weaker. After death, however, especially if it be *complete*, the reverse is true. In that condition, the tendon is capable of sustaining a weight sufficient to tear asunder probably a dozen of such muscles.

What, I ask, is the cause of this?—and a tyro in physiology ought to be able to answer the question.

During life, the muscles possess, perhaps, tenfold as much of vitality and its strength-giving quality, as the tendon does. Why? On account of their containing, in their organism, a superior amount of blood-vessels and nerves, with their invigorating influence. In a corresponding degree, therefore, they are stronger than the tendon.

After death, however, the muscles, having lost their life-giving and strength-giving attribute (I mean their *vital attraction*), are, to a great extent, the weaker; because, compared to those of the tendon, their structure and organization are very loose and lacerable.

In this case, it is worthy of observation, that, after death, the muscles possess all the chemical and adhesive affinities which attached to them during life. Their vital attributes alone are taken from them. And that privation has produced their weakness. Dr. Roget, therefore, is no more authorized to pronounce vital affinity a mere abstraction, or to use terms in relation to it, representing it as an *imaginary* generalization, than I am to apply similar terms to chemical affinity, in its influence on sulphate of soda, or nitrate of potash. And all the objections he has stated to this truth are but conjecture and cavil, under an assumption of sagacity and knowledge, beyond what either he or any other individual possesses.

Our author's unaccountably negligent and loose style of thinking on this subject is further manifested by a discreditable blunder, into which a man, possessed of his mental acuteness and discipline, could not possibly have fallen, except through inattention and wanton carelessness respecting the question at issue. And that question is the momentous and interesting one, involving the influence and character of the powers, affinities, and laws of chemistry and vitality.

Of the nature of these two sets of agents, or rather sources of action, our author correctly confesses his entire ignorance. And he frankly acknowledges that the period is "very far distant," when either he, or any other person, will have attained an acquaintance with it. Indeed, from the form of expression used by him, he seems extremely doubtful whether that period will ever arrive.

Yet, in the midst of this entire destitution of knowledge respecting the nature of chemical and vital affinities, he confidently asserts that, when the darkness which now covers them shall have been dissipated, and the requisite light thrown on them, they will be *found to be the same*. He thus clearly asserts that, what he avowedly does *not* know, he, notwithstanding, *does* know. For, if, as he had previously acknowledged, he knows nothing about the affinities in question, how does he know that they are identical with each other? The allegation is even worse than absurd. This is no caricature representation of his notions; but a picture of them true to life. The genuine interpretation of this singular abuse of words and suppositions is, that though Dr. Roget is totally uninformed of the *character* of both chemical and vital affinities, he, notwithstanding, knows them to be of the *same character*. His expressions on the subject may be thus syllogized.

Of the nature of chemical and vital affinities I am now ignorant.

The time is very remote (perhaps indefinitely so) before any satisfactory knowledge of those affinities will have been attained.

Therefore, I know that when that time shall have arrived (should it ever arrive) they will be found to be the same.

These are not, indeed, our author's words. But I appeal to the candid and enlightened reader, whether the mixture of incongruities and absurdities which they express, is not contained in the paragraphs I have quoted? And I cheerfully abide the issue of his answer.—Again.

Alluding to what he represents as *indications* of the identity of chemical and vital affinities, Dr. Roget, as the reader must remember, thus expresses himself in the preceding extract.

"Every fresh discovery in animal and vegetable chemistry, by showing the *mutual convertibility* of many of the proximate principles of organic compounds, adds to the number of *those indications*."

This is an assertion, the true character of which is not easily detected. It is either utterly groundless, and therefore unworthy of notice, in an intellectual point of view: or it is artfully *equivocal*, and hence exceptionable as regards its relationship to candor and truth.

If our author means by it that *vital action* can convert into each other the "proximate principles of organic compounds," his position is so correct and familiar, as to be nothing but a truism. But if he alleges that the conversion can be effected by chemical agency, he is mistaken; and his assertion is reprehensible, because unsound and calculated to mislead.

The three leading "proximate principles" (of animal organic matter) are gelatin, fibrin, and albumen. And the entire host of chemists, armed in all their skill and power, may be safely defied to take into their laboratories any one of these, and convert it into either of the others. Nor will the challenge be accepted; because every chemist worthy of the name is perfectly aware that he would be vanquished in the contest.

It is not true, therefore, that fresh discoveries in animal and vegetable chemistry make any perceptible approach toward a disclosure of the identity of vital and chemical affinities. On the contrary, I think them much more likely to produce an opposite effect. The more true light new discoveries throw on them, the better and more fully will they be understood; and, therefore, their essential and wide difference will be the more clearly perceived.

I am prepared to expect that opposition will be offered to this sentiment, on the authority of Professor Liebig, who informs us that M. Denis has "succeeded in converting fibrin into albumen, that is, in giving it the solubility and coagulability by heat, which characterize the white of egg."

For several reasons, this statement by Liebig is entitled, as testimony, to little or no consideration or weight.

In the first place, the statement is made in a manner much less confident and positive than that which the Professor usually adopts. The reason of this seems plain. He deems his report of a doubtful character. And what he, in his sublimated enthusiasm, thinks doubtful, in relation to the power and performance of chemistry, should be held trebly doubtful by all calm and judicious inquirers.

Nor does the Professor even allege that the conversion of fibrin into albumen was complete. He only says that the former was rendered *soluble* and *coagulable* by heat. But solubility and coagulability by heat are not the only qualities which distinguish albumen from fibrin. Those substances differ also in other respects, in relation to which no conversion or identification is stated to have been produced.

Even from Liebig's own account of the matter, then, we are not authorized to believe that the conversion of the latter article into the former was entire. On the contrary, we have ground for strong suspicion that it was not, else would the production of other resemblances between them have been mentioned.

In the second place, a single instance of *reputed* and *reported* success, in an experiment so novel and important as that of attempting the conversion of fibrin into albumen, is insufficient for the positive establishment of the event. And, as far as information has reached me, M. Denis is the only experimenter on the subject alleged to have been successful. Had Professor Liebig himself succeeded in the experiment, or had he known of any other person besides M. Denis, who had been so fortunate,

the public would doubtless have been apprised of the fact. The Professor is too deeply enamored of his own opinions to be likely to conceal or forget any discovery calculated to favor them.

But my strongest objection to the reported conversion, as an argument, in the present case, is yet to come.

No matter whether M. Denis has or has not converted *dead* fibrin into *dead* albumen. That is not the point at issue. Has he, by chemical agency, converted fibrin, either dead or living, into *living* albumen? into albumen, I mean, possessing the condition which that substance possesses when circulating as a portion of living blood? or when it constitutes a part of a living tissue?

These questions I venture myself to answer in the negative. And, if personally interrogated, M. Denis will acknowledge that my answer is correct.

Admitting then the entire soundness of Professor Liebig's report, it has not, as an argument, in the present discussion, the weight of the gossamer. It is essentially irrelevant to the point under consideration.

The topic agitated is not the influence of chemical affinity, in relation to *dead*, but in relation to *living* matter. And I need hardly add, that the two cases, being the very opposites of each other, admit of neither reciprocity nor connection, comparison nor analogy. To me, therefore, it is matter of amazement, that able and enlightened men persist in contending that the same principles are operative in each.

The last paragraph of the preceding extracts contains another very palpable error. I allude to the assertion, that "the vital properties are not, as is commonly expressed, superadded to matter, in the process of organization, but are the result of the material constitution, that is, of the *peculiar combination and arrangement of the ultimate molecules of the organized tissues.*"

As far as our author's notion is discoverable through his style, which is much more remarkable for its elaborateness and verbosity than for its perspicuity and definiteness, his meaning in this passage is, that the elementary molecules of organized matter (those I mean out of which organized matter is formed), possess, of themselves, even when in an isolated condition, true vital properties. Those properties, however, are then *latent*, waiting to be evolved and rendered open and active, by "combination and arrangement" with other molecules possessed of similar properties. Such combination and arrangement moreover, it is contended by our author, do evolve them, and thus produce living beings.

This hypothesis is neither new nor plausible, nor in any respect tributary to the promotion of science. On the contrary, it is exceedingly antiquated and time-worn, and subservient to one of the most exceptionable errors of Grecian philosophy—or rather it is that error itself, under an altered form. I had flattered myself that, among enlightened and respectable physiologists, the notion was obsolete and rejected, at least, if not entirely forgotten. Finding myself, however, so far mistaken, that the fancy, visionary as it is, receives the countenance and support of the leading members of the chemico-physiological school, I am inclined to believe that a few strictures on it, in this article, will not be out of place.

I feel persuaded that Dr. Roget has never so completely examined and analyzed this hypothesis, and then so thoroughly reflected on it, as to carry it out, in a deliberate view of it, to the full extent that its principles

warrant; else would he never have adopted it and attempted its defence. The reasons which have led me to this persuasion I shall briefly detail.

What our author calls the "ultimate molecules of the organized tissues" can be nothing else than oxygen, carbon, hydrogen, and azote. These are what I have myself called "vitalizable matter,"—meaning by the phrase, matter susceptible of vitalization, by being united with the vital principle. Dr. Roget, however, goes far beyond this, and pronounces them matter already vitalized—and actually possessed of all the properties of life, only existing in a latent condition, but ready to be roused into an active one, and then to put forth, without further aid, the vital plastic or productive force, and exhibit all the diversified phenomena of life, by the influence of combination and arrangement alone.

Now, this combination and arrangement are nothing more than a sort of *union* or contact of particles with each other. It is only the simple position or placement of them, front to front, back to back, side to side, or end to end.

Those ultimate molecules, possessing of themselves, though in a latent condition, all the properties and affinities of living organized matter, need only, in some of these modes, be suitably joined together, and, by their vivifying action on each other, living organized matter, with the whole array of its qualities, powers, and functions, is the product.

And of matter thus organized, one of the uniform and essential attributes being the vital plastic force just referred to, it not only assimilates, by way of nutriment, other matter to itself, but so controls and modifies such matter, as to give it form, size, odor, and color, and mould into organs wisely adapted to ulterior action, in the performance of functions salutary and necessary to the beings to which they belong.

In still plainer terms; if I mistake not Dr. Roget's meaning (if indeed his words embrace any definite meaning), his notion implies, that oxygen, hydrogen, carbon, and nitrogen, possess in and of themselves, among their *native* attributes, those of *wise* and *beneficent design*, and the ability to carry that design into effect, by the forms of organization they spontaneously produce.

For the benefit of the system, they construct and prepare the liver to secrete bile, the kidneys to secrete urine, the lungs to arterialize the blood, the heart and blood-vessels to perform circulation, the stomach to secrete gastric juice and prepare chyme, and the small intestines to mature that substance into chyle, the capillaries and parenchyma to perform sundry other sorts of secretions, together with the general process of nutrition, the muscles to produce various kinds of motion, with a long and diversified train of *et ceteras*, and the brain, spinal cord, and nerves, to superintend and regulate the whole.

Dr. Roget himself, when he speaks as an enlightened philosopher, and a judicious and observing man, fully acknowledges the production of these organic aptitudes for the performance of salutary functions, to belong to living matter, and to constitute an essential distinction between it and dead inorganic matter. But when he assumes the character of a wantonly speculating chemico-physiologist, he either forgets the mark of distinction, or perverts it to an unauthorized and sinister purpose.

If it be true, then, that, in the language of our author, "the vital properties are not superadded to matter, in the process of organization, but are the result of the peculiar combination and arrangement of the ultimate molecules of the organized tissues"—if this be true, then do we truly

inhabit a *world of* life within us as without us—then do the air we breathe and the food, water and other liquids we swallow (abounding as they do in the doctor's "ultimate molecules"), with all their properties, possess within themselves, and without any additional aid, the power of becoming living, organized, function-performing beings. Thus, instead of living "in the *midst of death*," as we are declared to do by an inspired writer, we live literally in the *midst of life* with radically living matter in *the midst of us*—so virtually says Dr. Roget!! For the completion of his scheme, however, an indispensable proviso must be admitted and settled. It is, that his "ultimate molecules" be properly united.

Here, however, presents itself a question exceedingly difficult to be resolved.

By what agent are our author's "peculiar combination and arrangement" of his "molecules" to be effected?

Do the "molecules" arrange themselves? or, are they arranged by some other and higher source of action? If the latter question is to be answered affirmatively, what is that source? Our author is bound to tell us. If the former question is to be answered affirmatively, then is even the far-famed Liebig mistaken; for he pronounces both atmospheric air and water to be *dead matter*, and perhaps so completely dead as to be *mineral substances*.

But if the great German chemist be correct in this opinion, as I apprehend the entire scientific world believe him to be, then does Dr. Roget make a fatal departure from the time-worn and established maxim, *ex nihilo, nihil fit—from nothing, nothing results*—or contraries cannot produce each other. For, in the case in question, he virtually asserts that from *dead matter*, unaided by "superadded properties," *living* matter *does* result.

To expose either unfairness or defect in this chain of reasoning, our author and his advocates are openly defied. That they may possess a mirror by which their inconsistencies and blunders are accurately represented, I ask their attention to the following homely but sound syllogism, constructed in conformity to their tenets from the preceding matter:

Dr. Roget asserts, that, by a peculiar combination and arrangement, without any superadded matter or properties, oxygen, hydrogen, carbon, and nitrogen, can be made up into living organized matter.

Professor Liebig and the entire world of science pronounce these four articles to be dead matter.

Therefore, from *dead inorganic matter*, without the superaddition of "vital properties," *living organized* matter can be produced. Such is the preposterous inference deducible, by a fair process of logic, from sentiments openly avowed in the "Outlines of Physiology and Phrenology," by Dr. Roget.

ART. VI. *Vaginal Hysterotomy.* By GUNNING S. BEDFORD, M. D., Professor of Midwifery and the Diseases of Women and Children in the University of New York.

DECEMBER 19th, 1843, Drs. Vermeule and Holden requested me to meet them in consultation in the case of Mrs. M., who had been in labor

for twenty-four hours. On arriving at the house, I learned the following particulars from the medical gentlemen. Mrs. M. was the mother of two children, and had been suffering severely, for the last fourteen hours, from strong expulsive pains which, however, had not caused the slightest progress in the delivery. I was likewise informed that, about four hours before I saw the case, Dr. Miner, an experienced physician, had been sent for, and after instituting a vaginal examination, remarked to the attending physicians that, "in all his practice he had never met with a similar case." Dr. Miner suggested the administration of an anodyne, and, having other professional engagements, left the house. Mrs. M. had been taken in labor Monday, December 18th, at seven o'clock P.M., and on Tuesday, at seven P.M., I first saw her. Her pains were then almost constant, and such had been the severity of her suffering that her cries for relief, as her medical attendants informed me, had attracted crowds of persons about the door. As soon as I entered her room, she exclaimed, "For God's sake, Doctor, cut me open, or I shall die; I never can be delivered without you cut me open." I was struck with this language, especially as I had already been informed that she had previously borne two children. At the request of the medical gentlemen, I proceeded to make an examination per vaginam, and I must confess that I was startled at what I discovered, expecting every instant, from the intensity of the contractions of the uterus, that this organ would be ruptured in some portion of its extent. I could distinctly feel a solid, resisting tumor at the superior strait, through the walls of the uterus, *but could detect no os tincæ*. In carrying my finger upward and backward toward the culde-sac of the vagina, I could trace two bridles, extending from this portion of the vagina to a point of the uterus, which was quite rough and slightly elevated; this roughness was transverse in shape, but with all the caution and nicety of manipulation I could bring to bear, I found it impossible to detect any opening in the womb. In passing my finger, with care, from the bridles to the rough surface, and exploring the condition of the parts with an anxious desire to afford the distressed patient prompt and effectual relief, I distinctly felt cicatrices, of which this rough surface was one. Here, then, was a condition of things produced by injury done to the soft parts at some previous period, resulting in the formation of cicatrices and bridles, and likewise in the closure of the mouth of the womb. At this stage of the examination, I knew nothing of the previous history of the patient more than I have already stated, and the first question I addressed to her was this; "Have you ever had any difficulty in your previous confinements? have you ever been delivered with instruments?" &c., &c. She distinctly replied that her previous labors had been of short duration, and that she had not been delivered with instruments, nor had she ever sustained any injury in consequence of her confinements. Dr. Vermeule informed me that this was literally true, for he had attended her on those occasions. This information somewhat puzzled me, for it was not in keeping with what any one might have conjectured, taking into view her actual condition, which was undoubtedly the result of direct injury done to the parts. I then suggested to Drs. Vermeule and Holden the propriety of questioning the patient still more closely with the hope of eliciting something satisfactory as to the cause of her present difficulty, remarking, at the same time, that it would be absolutely necessary to have recourse to an operation for the purpose of delivering her. On assuring her that she was in a most perilous situation, and,

at the same time, promising that we would do all in our power to rescue her, she voluntarily made the following confession.

About six weeks after becoming pregnant, she called on the notorious Madame Restell, who, on learning her situation, gave her some powders with directions for use; these powders did not appear to produce the desired effect. She returned again to this woman, and asked her if there was no other way to make her miscarry. "Yes," says Madame Restell, "I can probe you; but I must have my price for this operation." "What do you probe with?" "A piece of whalebone." "Well," thought the patient, but without expressing it, "I cannot afford to pay your price, and I will probe myself." She returned home and used the whalebone several times; it produced considerable pain, followed by a discharge of blood. The whole secret was now disclosed. Injuries inflicted on the mouth of the womb by these violent attempts had resulted in the circumstances as detailed above. It was evident from the nature of this poor woman's sufferings and the expulsive character of her pains, that prompt artificial delivery was indicated. As the result of the case was doubtful, and it was important to have the concurrent testimony of other medical gentlemen, and as it embodied great professional interest, I requested my friends Drs. Detmold, Washington, and Doane, to see it. They reached the house without delay, and after examining minutely into all the facts, it was agreed that a bi-lateral section of the mouth of the womb should be made. Accordingly without loss of time (she then having been in labor twenty-nine hours), I performed the operation in the following manner. The patient was brought to the edge of the bed, and placed on her back. The index finger of my left hand was introduced into the vagina as far as the roughness, which I supposed to be the seat of the os tincæ; then a probe-pointed bistoury, the blade of which had been previously covered with a band of linen to within about four lines of its extremity, was carried along my finger until the point reached the rough surface. I succeeded in introducing the point of the instrument into a very slight opening, which I found in the centre of this surface, and then made an incision of the left lateral portion of the mouth; and, before withdrawing the bistoury, I made the same kind of incision on the right side. I then withdrew the instrument, and in about five minutes it was evident that the head of the child made progress; the mouth of the womb dilated almost immediately, and the contractions were of the most expulsive character. As there seemed, however, to be some ground for apprehension that the mouth of the uterus would not yield with sufficient readiness, I made an incision of the posterior lip through its centre, extending the incision to within a line of the peritoneal cavity. In ten minutes from this time, Mrs. M. was delivered of a vigorous, full grown child, whose boisterous cries were heard with astonishment by the mother, and with sincere gratification by her medical friends. The expression of that woman's gratitude, in thus being preserved from what she and her friends supposed to be inevitable death, was an ample compensation for the anxiety experienced by those who were the humble instruments of affording her relief. This patient recovered rapidly, and did not, during the whole of her convalescence, present one untoward symptom. It is now ten weeks since the operation, and she and her infant are in the enjoyment of excellent health. I omitted to mention that the urethra was preternaturally dilated. I introduced my finger as far as the

bladder without any consciousness on her part, such was the degree of its enlargement.

About ten days after the operation, Dr. Forry visited this patient with me, and heard from her own lips the narration of her case, so far as her visit to Madame Restell is concerned, and which I have already stated. On Saturday, January 20th, Dr. Forry again accompanied me on a visit to this woman, and a vaginal examination was made. The mouth of the womb is open, and will permit the introduction of the end of the fore-finger, and the two bridles are distinctly felt, extending from the upper and posterior portion of the vagina to the posterior lip of the os tincæ, which they seem firmly to grasp. The urethra is still very much enlarged, and somewhat tender to the touch.

At my last visit to this patient with Dr. Forry, she made some additional revelations, which I think should be given not only to the profession, but to the public, in order that it may be known that, in our very midst, there is a monster who speculates with human life with as much coolness as if she were engaged in a game of chance. This patient, with unaffected sincerity, and apparently ignorant of the moral turpitude of the act, stated, most unequivocally, to both Dr. Forry and myself, that Madame Restell, on previous occasions, had *caused her to miscarry five times*, and that these miscarriages had, in every instance, been brought about by drugs administered by this trafficker in human life. The only instance in which medicines failed, was the last pregnancy, when, at the suggestion of Madame Restell, she probed herself, and induced the condition of things described, and which most seriously involved her own safety, as well as that of her child. In the course of conversation, this patient mentioned that she knew a great number of females who were in the habit of applying to Madame Restell for the purpose of miscarrying, and that she scarcely ever failed in affording the desired relief. Among others, she cited the case of a female residing in Houston-street, who was five months pregnant; Madame Restell probed her, and she was delivered of a child, that, to use her own expression, "kicked several times after it was put into the bowl." It, indeed, seems too monstrous for belief that such gross violations of the laws both of God and man should be suffered in the very heart of a community professing to be Christian, and to be governed by law and good order. Yet these facts are known to all who read. This creature's advertisements are to be seen in our daily papers; there she invites the base and the guilty, the innocent and the unwary, to apply to her. She tells publicly what she can do, and, without the slightest scruple, urges all to call on her who may be anxious to avoid having children. Here, then, is a premium offered for vice, to say nothing of the prodigal destruction of human life that must necessarily result from the abominations of this mercenary and heartless woman.

With all the vigilance of the police of our city, and with every disposition, I am sure, on the part of the authorities to protect public morals, and bring to merited punishment those who violate the sanctity of the law, this Madame Restell, as she styles herself, has as yet escaped with impunity.

Occupying the position I do, and fully appreciating the important trusts confided to my care in connection with the department over which I have the honor to preside in the University, I have felt it to be a duty I owe to this community, to the profession, and to myself, publicly to expose

the facts of this case; and I fervently hope that the disclosures here made may tend to the arrest of this woman, and the infliction of the severest penalty of the law.

In a professional point of view, this case is not without interest. It must be evident to all that, without the operation, the patient must have sunk. She had been in labor precisely twenty-nine hours when I made the section of her womb; and, for twenty hours previously, the contractions were most energetic, possessing all the characteristics of true expulsive pains. But yet, with all this suffering, not the slightest change had been effected in the parts. If, therefore, nature had been competent to overcome the resistance, sufficient time was allowed for this purpose. Longer delay would undoubtedly have placed the life of both mother and child in severe peril; for, from the reiterated, but unavailing, efforts of the womb, there was reason to anticipate rupture of this organ, which would most probably have compromised the life of the mother; while, at the same time, the child was exposed to congestion from the constant pressure exerted on its head by the contractile force of the uterus.

I am not aware that this operation has been previously performed in this country; at least, I have found no record of it. It has, on several occasions, been resorted to in Europe, but not always with success.

ART. VII.—*Some Cases of a Rare Form of Exanthem.* By ALEXANDER S. WOTHERSPOON, M. D., Assistant Surgeon U. S. Army, and Late Resident Physician to the New York Hospital.

IN the course of a three years' connection with the New York City Hospital, it was my lot to witness, each succeeding winter, a single case of a very remarkable and peculiar form of Exanthematic disease, characterized by intense violence, a rapid succession of the symptoms, and a uniform fatality. Attracting the attention of all, the opinions expressed as to its nature were equally various, thus rendering an inquiry into its true character, to me at least, a matter of the greatest interest and importance. I could find, however, no one, even among those whose experience had afforded the most extensive opportunities of observation, who could give me the necessary information, or who could refer me to works containing a description of the disease. Forced to investigate for myself, I consulted most of the more common treatises on diseases of the skin with but little success, meeting now and then a few obscure hints evidently showing that such an affection had been previously met with. Not one of these authors, however, described it with accuracy or spoke of it from personal knowledge. Nor could I, in searching carefully all the various medical journals in the Hospital Library of over five thousand volumes, discover more than two recorded cases at all resembling the disease in question. From this I concluded that the disease was of very rare occurrence, and that perhaps a detail of the three Hospital cases, together with such others as I should be able to obtain, would not only be interesting, but might perhaps, at some future time, become of practical value to the profession. My own observations, which were made at the bed-side, will doubtless appear to many as imperfect in some points, as they are unnecessarily minute in others; but, as regards their minuteness, an anxious desire

that nothing should be omitted calculated to throw the least degree of light on the nature of so very obscure a malady, must be my apology. Autopsies were fortunately obtained in all the cases, though such was the disagreeable impression created by the awful nature of the symptoms, and the rapid and terrible progress of the disease, that it was only with the greatest difficulty that I could obtain either permission to make, or assistance in conducting, the examinations.

With these preliminary remarks, I may now enter upon a detail of the cases.

Case I.—James Hill, a remarkably strong and muscular young man, about twenty-three years of age, was admitted into the sixth ward of the Marine Hospital, January 8th, 1841. He is a Norwegian by birth, and of rather intemperate habits; he has been employed as ordinary seaman on board of a coaster, plying between Charleston and this port. He has been a month ashore. Four days since he was suddenly attacked by severe cutting pains in the small of the back, so acute and attended with such a feeling of weakness that he was compelled immediately to take to his bed. He has been feverish, has lost his appetite, and for the last three days has been unable to keep anything on his stomach. His bowels have during this time been constipated.

When admitted at twelve M., his face, neck, and whole body, were of a purplish red color, deeper in some parts than others, particularly about the face and neck. Over the chest, abdomen, upper and lower extremities, were thickly scattered numerous superficial spots of a beautiful red and purple color, of the size of small shot, perfectly distinct and not disappearing on pressure. A few others of the dimensions of a sixpence, were seen upon the sides of the trunk, apparently deeper seated and of a light blue color, having very much the appearance of old contusions. Until to-day, he has never observed either of these eruptions. The face appears swollen, and a few small vesicles are seen scattered over its surface. There is considerable effusion of blood below the conjunctiva, and such a copious secretion of the lachrymal fluid, that it flows over the eyelids, streaming down the cheeks. His tongue is covered with a remarkably thick pasty white fur, which also appears to coat the gums and the roof of the mouth. He has no appetite, complaining of constant thirst and an inclination to vomit whatever he swallows. Deglutition is easy and unattended with pain. There is no swelling or tenderness of the abdomen. His bowels have not been opened for three days. He is remarkably restless and uneasy, sighing frequently. Pulse 120, of a natural volume. Intelligence good, answering questions with readiness.

7 P. M. About an hour ago, his bowels were freely opened by an eccoprotic mixture. The stools were natural, but no material change in his condition followed. He has just had another evacuation, the fæcal matter being of a reddish color from intermixture with blood.

Very soon after this he became very violent, throwing himself about on his bed, crying out aloud for water, and declaring that he was "burning up inside." He drank with the utmost eagerness all that he could obtain. The general congestion of the surface increased, the heat of the skin at this time being very great. The purple spots increased in size; and on the upper part of the body, the epidermis was raised into small blisters, by effusion of sanious fluid or thin blood. Some of these burst open and bled freely. A considerable hemorrhage, at the same time, commenced from an old wound on his finger. The vesicular eruption made no further

progress. He died about 9 P. M., his intelligence remaining unimpaired until near the last.

Sectio-Cadaveris, 16 *hours after death.*—The exterior of the body was of a general dark purplish tint. Of the superficial red and purple spots, but very few traces were left, but the larger and deeper seated ones were increased both in size and number. In the axillæ, and on the surface immediately adjacent, were vibices, forming linear blisters of considerable size, filled with bloody serum; and in the cellular tissue of the neck there was considerable effusion of sanious fluid.

Head.—The whole surface of the brain was covered with a layer of sanious fluid which filled the cells of the pia mater; the vessels generally were filled with blood; and the substance of the brain was soft, and covered with numerous red points when cut.

Chest.—The large vessels were distended with great quantities of a thin, watery, dark reddish blood, containing a few small black and friable coagulæ. The parenchyma of the lungs and the lining of the bronchial tubes were of a general red color, from imbibition of blood. The tissue of the organs was not particularly softened; but the heart did not possess its usual firmness, being quite flabby, and the walls of the left ventricle collapsing when it was laid upon the table. The whole of its lining membrane, as well as that of the aorta to its bifurcation, was stained of a uniform dark-red color.

Abdomen.—The liver was of a dark grey color, and full of blood. In two spots there had been an effusion into the parenchyma of the organ, forming a sort of apoplectic condition. The gall-bladder contained a quantity of green, watery bile. The substance of the kidneys, the lining membrane of the calyces, of the pelves, the ureters, and bladder, were of a more or less red hue, from extravasation of blood and its imbibition by the tissues. Beautiful purple and blue spots were found on the mucous membrane of the alimentary canal, being particularly remarkable in the stomach near the pylorus, and in the transverse and descending colon. The glands of Peyer and of Bruuner were much developed in the ileum, near the ileo-cœcal valve.

Case II.—Thomas Godfrey, a very athletic man, æt. 27, born in Connecticut, was admitted into the Marine Hospital, January 5th, 1842. He complained chiefly of an unusually severe pain in the small of his back, shooting forward to the abdomen and down the thighs. There was some excitement of pulse; also hot skin, thirst, and loss of appetite; his tongue was covered with a moist white fur; and there was considerable prostration of strength. He says that while coming down the Hudson last night in the vessel to which he was attached, he was exposed to the rain, causing him to become very wet and chilly; and that early this morning, he assisted in unloading the schooner, still having on him the undried clothes he had worn during the night previous. Although he soon began to complain of pain in his back and general weakness, yet he was able to carry 150 bushels of oats from the vessel some distance on the wharf, before 12 o'clock. By this time, the pain became so severe, that he was compelled to give up working, and take to his bed. He says that his general health has always been good, that he is usually very temperate in his habits, and that he has not, as far as he himself knows, been exposed to the contagion of small-pox or scarlet fever.

January 7.—The pain in the back has been considerably alleviated by

cups to the part; the blood having oozed so freely from the scarifications, that it was absolutely necessary to check it by compression. He still continues feverish, with a full, hard, and slightly frequent pulse, notwithstanding hehas been using an antimonial solution. Bowels were freely moved during the night. This morning, for the first, an erythematous blush was observed upon the face and upper part of the chest. He complains of slight soreness of the throat.

January 8.—By the afternoon of yesterday, the erythema had extended over the whole body; the soreness of the throat increased, and he expectorated some bloody mucus. The reddish blush continues this morning, the skin being remarkably hot; and when the hand is passed over it, a rough sensation is experienced, as if a crowded eruption of minute papulæ was about making its appearance. On the upper part of the chest is a number of small purple spots of the size of a pin's head. Tongue is loaded with a thick moist white coat; teeth and lips covered with sordes; and he complains of sore throat, the tonsils and fauces appearing rough and covered with dark bloody red points, accompanied by some cough with expectoration of bloody mucus. Pulse is softer and more frequent.

January 9.—At 12 M., he was in the following condition. The whole of the trunk, the superior and inferior extremities, are of a universal purplish red tint, the color being deepest upon the abdomen and chest. The face, paler than the rest, has a swollen and puffy appearance; and he says that he feels quite stiff. The eyelids are ecchymosed, and the forehead has a deep bluish purple tint. Over the whole external surface of the body, are minute elevations, packed closely together, but not assuming any determinate form. They are of various colors, from that natural to the skin, to a deep red or purple. By allowing the light to strike the limbs in a oblique direction, they are seen to be distinctly vesicular; and, when slightly pricked with a fine cambric needle, a clear, transparent, or sanious fluid exudes, according to the previous color of the vesicle. Spots of a deep red and purple color, are scattered over the whole body, but most numerous and most vivid on the legs and thighs. There are also on the hands, chest, and limbs, a few dark blue elevations, three to four lines in diameter, but of no regular shape, evidently caused by effusion of blood immediately beneath the epidermis. Some of these which have broken, discharge a dark sanious fluid. The general heat of the skin is not very remarkable. There has been so much effusion of blood under the left conjunctiva, that the eye appears to be swimming in that fluid. He repeatedly clears his nostrils of mucus of a reddish tinge, and is continually hawking up large quantities of bloody fluid. His lips are dry, swollen, and stiff, covered with dark blackish scales; but his gums are unaffected. Tongue still with a thick dirty white coat. He complains very much of his throat, swallowing with great pain and difficulty. He is much troubled with an intense craving for cold water; but he has not vomited, notwithstanding he feels pain when pressure is made upon the epigastrium. His bowels were opened several times last night, but the evacuations are not bloody. He is perfectly rational; he does not complain of headache, and he has not, at any time, been delirious. A peculiarly disagreeable cadaverous odor is emitted from his body, filling the whole ward. Pulse is 130, feeble, and soft. Stimulants have been administered.

In the afternoon he began to sink rapidly, his pulse becoming more

frequent and feeble, and his extremities cold. The bleeding purpuric spots increased in number, and the hemorrhage from the throat continued. About an hour before he died, he vomited a couple of pints of blood mixed with a little mucus. He died at 11 P.M., slightly delirious.

Autopsy twelve hours after death.—The body was quite rigid. The general purplish red hue, so remarkable before death, had all disappeared; but the purple blotches still remained, though of nearly a black color. The epidermis can be raised with the greatest ease, light friction with the finger being sufficient to separate it from the layers beneath. When removed, the rete mucosum was found very moist, and covered by extravasations of blood, varying in size from that of a pin's head to that of a pea. The sub-cutaneous cellular tissue was, for the most part, free from effusions.

Head.—On making the usual incision from ear to ear, to expose the scull cap, a sudden gush of bloody serum took place, proceeding from an extravasation, as large as the palm of the hand, over the right temporal fascia. The membranes of the brain were quite healthy, but its veins generally were turgid with black blood. The cerebral substance was of a natural consistence, presenting, when sliced, numerous bloody points. About an ounce of fluid was found in the ventricles.

Chest.—The muscles of the chest and neck were firm, red, and healthy. The velum pendulum palati, tonsils, posterior walls of the pharynx, the root of the tongue, and the epiglottis, were all of a deep purple and nearly black color. This extended to the lining membrane of the minor surface of the larynx and upper part of the trachea, becoming gradually of a brighter red as the bifurcation was approached. This color pervaded the entire substance of the mucous membrane, which was evidently thicker than natural. Both lungs presented a mottled appearance from bloody effusions in the sub-serous cellular tissue; and, when cut, distinct lobules were seen, firm, granulated, and of a deep black color, having the same appearance as in pulmonary apoplexy. The intervening portions of the parenchyma were of a brick-red color, crepitating when pressed, and nearly in the natural condition. The mucous membrane of the brochi was reddened. The cavities of the pleura contained a small quantity of bloody serum. The heart was perfectly natural, with no softening of its muscular walls, and no staining of the lining membrane. When the large vessels were divided, more than a pint of thick black clotted blood poured out into the cavity of the chest.

Abdomen.—Æsophagus healthy. The pyloric half of the stomach presented a very beautiful appearance, being covered with crimson and purple spots. The consistence and color of the mucous membrane, otherwise, were perfectly natural. In the duodena were several red patches. The last three feet of the mucous membrane of the ileum were roughened by small hypertrophied glands of a grey color, which projected above the surface of the lining tissue. The mesenteric glands were not enlarged, but of a purple hue, generally. Liver and spleen normal; gall-bladder distended with a yellowish watery bile; kidneys and ureters healthy; as was also the bladder, except the portion near the opening of the urethra, which presented a few purpuric spots.

Case III.—John McCoddy, a very athletic young Irishman, æt. 18, was admitted into the New York Hospital on the 7th of February, 1843. He was suddenly seized about three days before admission, by

severe cutting pains in the small of his back, passing forward to the abdomen, by slight headache, and by such complete loss of strength that he was compelled, from the very first, to take to his bed, which he never left alive. The disease was not ushered in by any regular rigors, but by a few creeping chills soon succeeded by violent fever. Of temperate habits, he was attacked without any obvious cause, while enjoying apparently, the best of health. He has not been exposed to any contagious disease that he is aware of; and he says that he was vaccinated when young, of which a quite distinct scar still bears evidence.

At present, he is remarkably restless and uneasy, continually changing his position in bed, without, however, complaining of severe pain in any part. His intelligence is perfect. The integuments of the head, neck, hands, and feet, are of a uniform purplish red color; but the redness disappears on pressure, and again returns when removed. On the abdomen, chest, and thighs, are numerous small distinct circular spots of a deep crimson or purple color, persistent, generally, when pressed by the finger, but not elevated above the level of the surrounding skin. Several of a much larger size, some three or four lines in diameter, are seen upon the sides of the abdomen, apparently deeper seated, and of a blue color, as though the parts had been contused. Skin generally quite hot, much more so than natural. The vessels of the conjunctiva distended with blood, giving the membrane a dark red hue. Tongue covered with a thick, pasty, white coat, inclining to become dry in the centre. Throat, though he complains of no soreness, of a dark red color. There are also present, a constant feeling of nausea, intense desire for cold drinks, entire loss of appetite, sense of tightness across the epigastrium, and constipated bowels. Pulse 96, and of good strength. He was bled before admission. Ordered calomel, grs. x., to be followed by a saline cathartic.

February 8.—Passed a very restless night, during which his bowels have been opened several times, the stools being thin, very liquid, and of a blackish brown color. He now complains of slight headache, without dizziness, his intelligence continuing good. His lips are rather dry. Gums pale, neither spongy nor swollen. His tongue still covered with a thick dirty white coat. He has hawked up a good deal of slimy mucus streaked with florid blood. The tonsils and uvula are slightly swollen, of a deep reddish black color, and are covered with a layer of bloody mucus. Abdomen rather full and a little tympanitic; some tenderness, on pressure, in the epigastric and right hypochondriac regions. The purplish blush still continues, without spreading further on the trunk; but the crimson and purple spots are more numerous, of a deeper color and larger size, and more persistent than before. The breathing is hurried, irregular, and about 36 in a minute. The chest gives a good sound on percussion, the respiratory murmur being natural, with an occasional sonorous rhonchus. Skin still remains above the natural temperature, pulse 108, good strength and full. A remarkable fœtor exists about the bed, exactly similar to that which was remarked in the previous cases. Hirud. Med. ad epigast.

5 P.M.—Is now sinking fast; the extremities are cool; the rash, which has lost its bright hue, has assumed a deep livid tint. Effusion of blood has taken place under the left conjunctiva; and the purpuric spots generally have increased in size. Pulse over 160, and hardly to be felt. Hemorrhage continues from the throat, but none from any other part. He died a few minutes after the visit.

Necropsy, eighteen hours after death.—The body generally is of a livid hue, the color remaining the deepest about the head, neck, and extremities. Putrefaction had already begun in the abdominal walls, which were of a green color. The remains of the purpuric spots were seen particularly upon the abdomen and chest. The sub-cutaneous veins were very distinct, there having been oozing of blood through the walls, staining the adjacent tissues. There was but little rigidity except in the lower extremities.

Head.—The scalp was of a general red color, from imbibition of blood by the tissues; and the veins generally were filled with blood of a deep cherry red color. The substance of the brain was rather softer than natural, presenting the usual red points when cut by the knife.

Chest.—The muscles of the trunk generally were of a blackish red color, quite soft and easily torn. The large veins proceeding to the heart were distended with blood, of a deep cherry-red color and uncoagulated. Heart very flabby, its tissue being soft; internally, the valves and lining membrane, as well as that of the aorta, were stained of a deep red color from imbibition of blood. Both lungs were congested and softened throughout their whole extent, containing an abundance of frothy serum; and a few purple spots of small size were scattered over their surface, from extravasations into the sub-pleural cellular tissue. The bronchial tubes, which were red, contained some frothy bloody mucus. The uvula, tonsils, and adjoining parts, were slightly swollen, of a deep purplish, black color, and covered with a tough bloody mucus. When laid open, the parts were found infiltrated with blood.

Abdomen.—About two or three ounces of bloody serum were found in the cavity of the peritoneum. The liver was soft and flabby, of a natural size, and of a brownish grey color; the gall-bladder contained a little greenish bile. The stomach and the small intestines generally were stained of a red color by the blood exuding through the walls of the vessels. Numerous crimson and purple spots were found upon the mucous membrane of the stomach, and the lower part of the ileum and cœcum. Near the ileo-cœcal valve, both the aggregated and solitary glands were distinctly enlarged, the glands of Brunner projecting, like small beads, above the mucous membrane. In the large intestine, the fœcal matters were stained with blood. The kidneys were large and flabby, and the cortical substance was quite red; and some extravasations of blood were found beneath the lining membrane of the calices. The bladder, like all the other organs, was soft and stained with blood. The tissue of the spleen had degenerated into a reddish pulp. The mesenteric glands, corresponding to the enlarged plates, were increased in size, softened, and of a deep, blackish red color.

No one, it is fair to presume, who has carefully read over the detailed symptoms of the three preceding cases, will hesitate a moment in pronouncing them strongly marked specimens of one and the same disease. Strong, athletic men, in the prime of life and in the midst of apparently perfect health, it has been seen, are suddenly seized with slight, creeping chills, and forthwith violent acute pains in the small of the back; and so complete and immediate is the prostration of strength, that they are compelled to leave their employments and to take to their beds. Fever succeeds, with loss of appetite, the most intense and distressing desire for cold drinks, accompanied with nausea and other symptoms of gastric irrita-

tion. There are also much anxiety, sense of tightness across the epigastrium, sighing, continual restlessness, and constant wish for a change of position. After suffering in this way during thirty-six or forty-eight hours, a purplish red rash begins to appear upon the face and extremities, which gradually diffuses itself over the neck, limbs, and trunk, until the whole cutaneous surface becomes of a uniform deep red hue. The skin, however, is not alone affected, as the mucous membranes also participate in the universal congestion; the vessels of the conjunctiva are seen to form a dark red net-work around the cornea, while the throat assumes the same hue or becomes covered with numerous red points. Spots of various dye, red, crimson, purple, and blue, appear over the surface of the body, arising from a rupture of the minute vessels, or from the passage of the blood through their walls, into the various surrounding tissues. Numerous minute vesicles also appear, containing limpid or bloody serum; and traces of a similar eruption are seen, promising to cover the whole body. The same congestions and the like rupture of the vessels, have been simultaneously occurring in and upon the lining membranes of all the deeper seated hollow organs, and even the different excretions begin to be tinged with blood. After the appearance of the eruption, these patients have been comparatively comfortable, owing to a cessation of the agonizing pain in the small of the back, though still tormented with a constant desire for a change of position. During this time they are perfectly rational, and in the full enjoyment of all their senses.

The fourth or fifth day of the disease arrives, and our patients have evidently, in spite of all treatment, been growing worse and worse. The deep purplish red color still continues. The effusions of blood have increased in size and number. The conjunctiva from extravasation of blood, becomes of one uniform red color; and it is raised around the cornea into a sanguineous chemosis; the whole giving a very peculiar and ferocious aspect to the countenance. An intolerable, sickening, cadaverous fœtor arises from the body and diffuses itself throughout the apartment. Hemorrhage takes place from the skin, the nostrils, the mouth; the blood comes, in fact, from every outlet, staining every excretion of a more or less deep red hue. The extremities at last become cold, the pulse beats more and more frequently, and with less and less force, slight delirium supervenes, and death, sooner or later, apparently not so much from the loss of blood, as from a complete and overpowering exhaustion of the whole nervous system, closes the unhappy scene.

On a post-mortem investigation, we find evidences of congestions and effusions of blood in every organ, general softening of all the parenchymatous and muscular tissues, and a peculiar alteration of the blood, by which it becomes changed into a dark cherry-red watery fluid, containing a few thin friable black coagulæ, a condition described by the older writers, and by them denominated "a putrescent state."

What, then, is the true nature of this terrific disease? My own conviction is that it is a rare form of variola; and to this conclusion, I have been led by the following considerations:

1st. The character of the premonitory symptoms.

2d. The character of the eruptions and the peculiar variolous fœtor.

3d. Passages in the older writers, showing that they had recognized and partially described a form of small-pox, closely resembling this in many particulars.

1. *The Premonitory Symptoms.*—If we compare the signs usually laid down in our standard works as prognostic of small-pox, with those

that ushered in the cases we have just detailed, we find them all present in a more or less marked form. We have the severe cutting pain in the back, the sickness at stomach, the præcordial anxiety, the prostration of strength, and the non-appearance of the eruption until the forty-eighth hour. So similar, indeed, are they, that were we to form our judgment from the premonitory symptoms alone, the diagnosis would appear remarkably easy.

2. I propose to consider separately the character of the purplish red rash, that of the vesicular, and that of the purpuric eruptions.

It is to the anomalous character of this purplish red rash, that we owe most of the difference of opinion expressed in regard to the nature of this affection; for many were consequently induced to look upon it as nothing more nor less than an unusually malignant form of scarlatina. This, among others, was the view taken by Dr. Pond, whose case I shall now give as it was published in the New York Medical Gazette, under the title of "A Case of Scarlatina Complicated with Purpura Hemorrhagica." Dr. Pond founded his diagnosis principally upon the character of the eruptions, and upon the fact that very soon after his patient's death, several other members of the same family were successively attacked by a scarlet fever, concerning the true nature of which there could not be the slightest doubt. The case, however, is precisely analogous in every respect to those which occurred in the Hospital; and it was pronounced to be the same disease, by several physicians who had witnessed both. It is a little singular, too, that the only two other published cases which I have been able to find, after carefully searching a large number of medical journals, should both have been considered as cases of scarlet fever, notwithstanding in the second of these last, the variolous eruption was so marked as not to admit of the least doubt of its simultaneous occurrence.

Case IV.—"*A Case of Scarlatina Complicated with Purpura Hemorrhagica, by James V. Pond, M. D.*—On the 12th of January (1842), about one o'clock P. M., I was called to see A. B., Esq., æt. 34, of intemperate habits, with a deeply scarlet, nearly purple countenance. The surface of the body also scarlet, though of not so deep a tinge, yet nearly that of a boiled lobster shell; the limbs completely suffused, though of a still lighter color. I was informed that he had been ill since the day previous, or that he had not been quite well for two days. On more particular inquiry, I ascertained that he had, as the attendant informed me, been laboring under a cold for four or five days. His tongue was moist, red at the end and edges, and covered with a fur of a lightish hue. The fauces and tonsils were considerably tumefied, and of a deep scarlet appearance, yet deglutition was little if at all impeded. The pulse was full and round, though not very hard or difficult of compression, about eighty-five or ninety beats per minute. The patient complained of severe pains in the lumbar region, but suffered from no other distress. As he was desirous to know the name of the disease, I did not hesitate, with such unequivocal appearances, to pronounce it scarlatina. I was aware that pain in the back was not pathognomonic of such a disease, but I accounted for that symptom from his frequent attacks of lumbago, by which he had formerly been often and severely afflicted. There had been no alvine evacuations for the preceding thirty-six hours. I directed ten grains of the proto-chloride of mercury, slightly nauseating doses of tartarized antimony, and diluent ptisans. On my visit the next morning, I found the cathartic had produced two free evacuations, which were followed by entire relief from the pain in his back; but the eyes, which yesterday showed signs of very moderate vascular excitement, were now highly inflamed, the vessels of the selerot portion of the conjunctiva being much distended, presenting the appearance, at a little distance, of gores of blood. The suffusion of the face,

and indeed of the entire surface, was rather deepened, yet the pulse was of the same speed and feel as on my first visit, but the artery was perhaps a little more easily compressed. There was very little thirst or desire for any ingesta, and the patient said he felt well. Astringent gargle, &c.

"At one o'clock next morning I received a message from the family, stating that the patient was worse, and soliciting my immediate attendance. I found that the pain in the loins had returned, and that he was in a tossing and restless condition. There had been two evacuations of blood from the urethra, each of which, over a pint, had coagulated as perfectly as if it had been drawn from the arm. The pulse had become sensibly accelerated and weakened from such a loss. The face was of not quite so deep a purple; and there was observable upon the hands and arms petechial spots, which, however, produced no elevation of the cuticle. At nine in the morning I again saw the patient, whom I found refreshed with sleep and rest, having obtained entire freedom from pain by morphine. He, however, manifested signs of increasing debility, from the continued hemorrhage, having had two more discharges of blood from the bladder, amounting altogether since its commencement to over two quarts from this source alone. Blood was now also pretty freely oozing from the fauces, gums, and parietes of the mouth, sufficient to saturate a napkin or two. There was likewise a bloody weeping from the eyes. Some of the ecchymoses on the limbs, which were being filled with dark blood, had attained the diameter of one, two, or three lines. By puncture or pressure, the blood was readily discharged from them, but extravasation soon supplied the deficiency. These ecchymoses did not, however, assume a pustular appearance, for scarcely was there any elevation recognizable either by the eye or hand. From a wound on the hand, caused some three days before by opening oysters, commenced a gradual stillicidium of blood, the edges of the wound assuming a gangrenous appearance. The sanguineous discharge from this wound was soon arrested. On approaching near the bed-side, an unpleasant exhalation occasionally became manifest, reminding one of the fœtor of variola.

"During the day, a number of sanguineous discharges from the bladder occurred, and with each evacuation was the strength of the patient sensibly prostrated, while the diameter of the vibices was gradually being enlarged.

"The brain was not originally implicated, and did not at any time sympathize in the disease. The mental faculties were therefore perfect.

"In the evening I again saw, and remained with the patient to a late hour. There had been frequent and copious repetitions of the renal hemorrhages, and the bloody oozing from parts already named, had in no degree subsided. The pulse was more frequent, and evanescent, and he was exsanguinated and prostrated to almost the lowest degree of debility. I was much surprised to learn that, during my absence, he had made an autographic will of his property, and now requested me to witness it, observing that I was a very fit judge of his capacity to execute such an instrument.

"At nine A. M. on Saturday, 15th, I was informed that the hemorrhages continued during the night, and that near morning, by his desire, the attendants raised him to use the close-stool, on which he passed per anus a large amount of blood, followed by fainting; and that, soon after he was placed in bed, the scene was closed by death.

"The autopsy was conducted by Dr. S. A. Sabine. On opening the abdomen six hours after death, the bladder and kidneys were carefully removed. The latter were dark colored, congested, and softened, and the cellular tissue posterior to them was much injected with blood. On laying open the pelvis, they were found of a dark purple color, apparently from effusion of blood into the sub-mucous tissue. The ureters were normal, but the bladder on its inner coat was covered with spots of purpura. Spleen much congested, softened, of a dark purple color. The liver was natural, but on its convex surface was formed a vesicle of the size of a quarter dollar filled with bloody serum. The mucous coat of the intestines was beset with numerous dark vibices. A small portion of the lung was removed by an incision through the diaphragm. Its parenchyma was natural, but underneath the serous coat were formed the pervading vibices."

The next case is from Johnson's Medico-chirurgical Review, vol. 31, page 306. It is much to be regretted that it has been drawn up with so little attention to many very important particulars, the notes having evidently been transcribed from memory alone. Drs. M. Hall and Johnson, it will be seen, both concur in regarding it as a case of complicated scarlatina, forming their judgment from the appearance of the fauces when not covered with blood, and the absence of other characteristic symptoms.

Case V.—"*Purpura Hemorrhagica fatal in five days.*—Mr. Du B., æt 18, came home apparently well, on Friday the 21st December, and ate his dinner. In the night he was seized with a severe headache and rigor, and next morning Mr. Hodding gave him some calomel and a black dose. Next day (Sunday), he had another severe rigor with violent pains in the limbs, and that evening the face got red, but without any petechiæ. The redness spread downwards and petechiæ appeared upon the chest, and ultimately over the whole body, in the most intense manner, they being, in many places, so confluent as to resemble a black surface. The hemorrhage commenced the next day (Monday) from bowels, kidneys, throat, nose, and even the eyes, to a most frightful extent. Sulphate of magnesia and well acidulated infusion of roses were given so as to clear the bowels, and acids were freely exhibited, with the view of restraining the hemorrhages, but to no purpose. On Tuesday morning the patient was seen by Dr. M. Hall and Mr. Hodding. The case appeared to Dr. Hall to be a complication of malignant scarlatina with purpura hemorrhagica. A grain of the sulphate of quinine was ordered every hour, with mineral acids. Dr. Johnson saw the patient at three o'clock, and afterwards on the evening of the same day with Mr. Hodding. The spectacle on this day, which the patient exhibited, was truly awful. The features were so swelled and the face so covered with black coagulated gore, that no person could have recognized him. The blood was issuing from eyes, nose, mouth, bladder, and bowels. The skin was either black with confluent petechiæ exhibiting extensive tracts of ecchymoses, or densely covered with a dark petechiæ. The pulse was 120, and rather firm in the morning, the intellect clear, the tongue rather pale, as were the fauces when not covered with blood, and the fœtor from the breath was scarcely bearable. The chest was sonorous throughout, the breathing not laborious, the abdomen soft, and the skin not much above the natural temperature. Some sulphate of magnesia was given this day with the acid draughts, which cleared the bowels; and in the evening, as the pulse was flagging, the quinine was again resumed, with tincture of hops, beef tea, &c. The blood still continued to flow from all the mucous membranes in large quantities.

"At ten o'clock on Wednesday morning, the patient was found in a still worse condition than before. The pulse was quick and intermitting, the blood issuing from all the outlets, yet he had slept some, and he was able to get out of bed to the night chair. Port wine was ordered every hour, with powerful mineral acids and quinine. At four o'clock, the symptoms had rather increased, and at ten o'clock at night he expired."

The remaining case is extracted from the fifth volume of Ryan's Journal, where it is reported as occurring in the Clinique of M. Baudelocque, at the Hôpital des Enfans Malades. This case differs from the others in the eruption of purpura, commencing some weeks before the acute attack, and in the circumstance of gangrenous sloughs having been found in the throat after death; but it agrees with them in the remarkable coincidence of scarlet, purple, and vesicular eruptions, and in the general course and fatal termination of the disease.

"Basguyre, a boy of strong constitution, æt. 13, was attacked, in the middle of January last, with purpura hemorrhagica, which did not prevent him pursuing his usual occupations, until the 8th of February, when he was seized,

on getting up one morning, with shivering, succeeded by heat, fever, general uneasiness, cephalalgia, pains in the limbs and lumbar region. In the course of the day bilious vomiting came on, and the next day cough, diarrhœa, and pain in the right side supervened.

"On the 10th he came into the Hospital with the following symptoms: Decubitus on the back, great depression, redness and tumefaction of the face, eruption of papulæ over the body, scarlatine redness of the body generally, confluent patches of purpura upon the neck, upper part of the trunk, and thighs. Skin warm, pulse 124, regular, and small. Respiration 32. Lips dry and chapped, breath fœtid, thirst excessive, anorexia, no vomiting, three liquid and bloody evacuations by stool, incessant dry cough, without any cause detectible by auscultation or percussion.

"12th. The variolous eruption has partially subsided, the papulæ on the face being scarcely visible. Some vesicles on the arms present distinctly the central depression. The scarlatina has assumed a purple hue, the purpura is unchanged. No pain in the abdomen, no nausea or vomiting. Other symptoms the same; pulse 120, skin rather warm, and great depression. In the evening great agitation and violent delirium, lasting for the greater part of the night, then followed by excessive drowsiness.

"On the 13th, somnolency, cadaverous hue of the head, neck, and forearms. Neither of the eruptions can be distinguished on any of these parts. Orthopnœa, respiration 60, voice extinct, breath horribly fœtid, pulse small, thready, 184. The limbs still retain their warmth. Patient gradually sinks, and in three hours falls a victim to the disease.

"*Necropsy.*—The amygdalæ, velum palati, pharynx, and internal surface of the larynx, covered with a layer of brownish sloughs, exhaling a gangrenous odor. The parts underneath are of a violet hue. Around the glottis and on the tongue, are found some variolous pustules. The trachea and its ramifications contain a greyish fluid of a gangrenous smell, and their mucous membrane presents patches of ecchymoses. No remarkable appearance either in the lungs, pleuræ, or heart. The mucous membrane of the stomach covered with a multitude of small ecchymoses, resembling the stains of purpura upon the skin. The small intestines contain a greenish fluid, several lumbrici, also a few patches of ecchymoses. The glands of Peyer are prominent, greyish, and reticulated. The cœcum and transverse arch of the colon contain hard fœcal matter, two or three ecchymotic patches of the size of a sixpence. Liver of a light yellow color. Bladder distended with a great quantity of urine mixed with blood. The contents of the cranium healthy. This boy was of strong constitution, and no clue could be found to the attack of purpura, which preceded the invasion of the small-pox and scarlatina."

In two of the three hospital cases described by me, the red scarlet eruption was first observed, when it had already made some progress, on the fourth day of the attack, the period of their disease when they were taken into the wards. In the case of Godfrey, who was brought into the institution the morning after he was first affected, the purplish-red blush was seen to commence on the face and extremities, on the morning of the third day, differing in this from the characteristic rash of scarlatina, which is said to appear at the end of the first twenty-four hours; and in none of the other cases is the eruption mentioned before the third day from the first attack. The color is not of a bright scarlet hue, but rather of a deep purplish brick-red color, entirely distinct from the livid appearance of the eruption in malignant cases of scarlet fever; of which last I have witnessed, in the Hospital, two or three severe and fatal cases.

In one only of the Hospital patients was there any complaint of the throat, viz., a difficulty and soreness in the act of deglutition, arising from the intense congestion and infiltration with blood—phenomena more or

less marked in every instance. In the case from Johnson's Review, the fauces were pale where not covered with blood. In the sixth case, there were said to be gangrenous sloughs; but it is only necessary to read the description of the necropsy, to see that these sloughs were nothing more nor less than the false membranes, now and then effused on the pharynx and adjoining parts, in cases of variola, while the fœtor of the breath arises from the same cause, as in all the other cases.

There were no elevated papillæ on the tongue, and none of the strawberry appearances, so common in scarlatina. In all the Hospital cases, on the contrary, this organ was covered with a remarkably thick white pasty coat.

But if this is not the eruption of scarlatina, to which, it must be allowed, it presents many resemblances, to what class does it properly belong?

There is a form of roseola most frequently observed in cases of inoculated small-pox, but which is also known to precede severe attacks of the natural variola, which is thus described by Wilson. "The period of its appearance was generally the second day after the invasion of the constitutional symptoms, and nine or ten after the inoculation. * * * * * typical roseola, the eruption first appears upon the face and upper extremities, extending by degrees to the trunk and lower limbs." "More unfrequently," says Rayer, "this form of roseola is characterized by an almost generally diffused efflorescence, slightly prominent in some points." He adds: "The eruption of small-pox is occasionally preceded by a very extensive erythematous efflorescence of the face and trunk, in which case it is always confluent." Roseola has been regarded as a favorable symptom in small-pox, as long as it retains the brightness of its hue; but, on the contrary, "if it be dark and purplish, it portends a severe eruption and dangerous consequences." Now, if we suppose this rose-colored efflorescence deepened in hue by the general tendency to congestion, and altered in color by the change in the circulating fluid itself, we find it agree remarkably well with the form of eruption in question.

Sydenham, speaking of the epidemic small-pox of the years 1667, 1668, and 1669, says: "The confluent form of small-pox occasionally shows itself similar to an erysipelas, or a morbillus; so like them, indeed, that unless the medical man be very familiar with these diseases, they cannot be distinguished,* at least, as far as regards their external appearances."

In the time of Sydenham, it must be remembered, no distinction had yet been made among scarlatina, measles, and roseola, all being included under the common term, morbillus.

Morton, in his work, De Variolis, speaks of this complicated eruption even more explicitly, mentioning, at the same time, both the presence of petechiæ and the certainly fatal result. "Efflorescentia, confluens et ubique rubedine saturata, more febris *scarlatinæ*, vel erysipelatosæ, universam fere cutem perfundens cum petechiis intermixtis, ultra maturationis diem, nulla medicorum arte, posse protelari significat."—*De Variolis*, p. 186.

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* "Variolæ confluentes, nunc Erysipelatis ritu, nunc morbillorum, erumpunt; a quibus non, nisi a medico in his morbis versatissimo, distinguuntur, saltem quoad faciem externam."—*Sydenham*, p. 99.

As regards the purpura, it is a mere complication, its presence being readily accounted for on a post-mortem examination; first, by the altered condition of the blood; and, secondly, by the general softening of all the tissues, which was very remarkable in two of the three hospital cases, and in which the minute vessels may be readily supposed to take part. And here it may be mentioned, that it is not an uncommon circumstance for pure cases of purpura febrilis to become complicated with a roseolous rash, generally commencing, in most of the cases, upon the extremities. Quite a number of these I came across while searching for those of the purpuric variola. A very severe case of this kind is recorded in the eleventh volume of the London Lancet, for 1834–35; and such an eruption occurred in the two very singular cases reported by Dr. Graves, in the eighteenth volume of the Dublin Journal of Medical Sciences, and which he considered examples of such a peculiar and distinct form of disease, as to entitle them to a new name, Exanthema Purpureum.

In two of the three hospital cases, a distinct vesicular eruption was observed; in the first, on the face alone, but in the second over the whole body. These vesicles were filled with limpid serum, or with fluid of various hues of red and purple, from mixture with blood. None of these vesicles progressed so far as to become distinctly umbilicated. This central depression was, however, marked as very distinct in the French case. Sufficient cause for want of maturation in the pustules is found in the depraved state of the vital fluid, and the consequent nervous exhaustion. In all probability, had it not been for these circumstances, the whole of the reddened surface would have been covered with a most copious eruption of confluent small-pox.

3. In none of the more modern English works, either in monographs or general treatises on diseases of the skin, have I been able to find more than a passing allusion to a form of variola, represented as very malignant, and characterized by the appearance of purpura, hemorrhages, and early death. The descriptions are very meager, vague, and unsatisfactory, no cases being given by these authors, who do not seem even to have ever seen a case of the disease.

Mead, in his Cure of Small-Pox, p. 24, speaks of this form of disease in the following words:

"For I have seen, where at the very beginning, the pustules were so many small tubercles, full of blackish blood, resembling those raised on the skin when pinched by the forceps. And these were followed by an intermixture of purple and livid spots, such as physicians describe in the true plague. But it more frequently happens, that pustules coming out very thick the third or fourth day after, when they ought to fill, become livid and a little bloody, with black spots spread over the whole body, which forebode death in a day or two, because they are real gangrenes. It very often falls out at this time, that a thin, bloody fluid flows not only out of the patient's mouth, nose, and eyes, but also by every outlet of the body; but more especially by the urinary passages, through which it likewise issues sometimes in the first days of the distemper. These are manifestly of the confluent sort."

The following graphic description of a similar form of small-pox was furnished me by Dr. Peters, of this city, by whom it was translated from the German of Schonlein.

Variola Putrida.—In the first stage, already there appear signs of decompositions or putrefaction. The pulse is excessively irritable, and

without strength. Hemorrhages from the nose, and even from the lungs, ensue, and, at times, blood exudes under the skin. The blood cast out is black and dissolute. The skin is burning hot; the urine decomposed, of an ammoniacal odor, and of a dark red color, owing to the presence of cruor in it. In the second stage, we find the same irregularity and sluggishness in the development of the exanthem, as in the nervous form; and either single vesicles or all of them are filled with a semi-transparent fluid, tinged with blood, or else with pure opaque blood, forming the so-called "Variola Sanguinea seu Variola Cruenta." Between the pustules, we find extravasations of blood beneath the skin, and ecchymoses. Even, at times, hœmopthalmos occurs, blood flows from the rectum, is expectorated from the lungs, and excreted with the urine. Meanwhile, the fever increases, the skin is burning hot, the heat at times confined to the trunk, while the extremities are cold. The tongue is dry, brown, and cracked; the pulse cannot be counted; and an extremely cadaverous odor diffuses itself around the patients. If the disease prove fatal in the first stage, no pustules may be discovered.

One extract more in conclusion, from Sauvages's Nosologia; and, in this description, no one can possibly fail to recognize the same disease.

"*Variola Miliaris.*—Petite vérole très discrète vesiculaire et pourprée.

"Hæc est altera discretæ malignæ varietas.

"Cognoscitur. 1. Ex pustularum majori distantia, minori numero. 2. Cum *purpura* et pustulis morbillosis accedunt vesiculæ densæ, minutissimæ. 3. Symptomata febris malignæ adsunt. 4. Quandoque pustulæ sunt in brachiis duæ vel tres, interea dum pectus miliari, aut *rubeoloso erysipelate* obsidetur, vel petechiis; dum vesiculæ miliares per artus disperguntur, et potissimum pectus obsident sero pellucido plenæ, quæque cutem tantum exasperant."—Vol. ii., p. 375. *Sauvages's Nosologia. Species et Genera Morborum.*

[Translation.]—*Miliary Variola.*—This is another variety of the malignant discrete form.

It is known. 1st. From the greater distance and lesser number of the pustules. 2d. From the very minute and crowded vesicles mixed with purpura and measles-like pustules (*pustulis morbillosis*). 3d. From the presence of the symptoms of malignant fever. 4th. And when the pustules upon the arms are only two or three in number, the breast is the seat of a miliary or reddish erysipelatous eruption (*rubeoloso erysipelate*), and while miliary vesicles are scattered over the limbs, then those seated on the breast are full of a pellucid serum, which merely roughen the skin.—*Sauvages's Species and Genera of Diseases*, vol. ii., p. 375.

Hence it follows that the disease under investigation, of which six cases have been presented, is a form of Variola, complicated with Roseola and Purpura Hemorrhagica, known to the olden writers under various names, as Variola Sanguinea, Cruenta, Maligna, Putrida, Miliaris, Hæmatodes, Confluenta Nigra, &c.; but which, at the present day, owing to causes which, without enumeration, must be obvious to all, is little recognized.

PART SECOND.

Critical Analysis.

ART. VIII —*Annual Reports of the Registrar-General of Births, Deaths, and Marriages, in England; First, Second, Third, and Fourth.* London, 1839, 1840, 1841, 1842. 8vo., pp. 1138.

IT was a noble example that was set by England, in 1837, in the establishment of the "*Act for registering births, deaths, and marriages,*" including a registration of the causes of death. Voluminous annual reports have since regularly appeared; and this annual system of registration, in the importance of its results, has already repaid, more than tenfold, the trouble and expense that it has involved; proving alike invaluable to the philosopher, the physician and the political economist, to the statesman and the legislator. Its utility has been sufficiently established, on the ground alone that it has developed the true laws of population and of mortality, in connection with the value of life annuities and insurances, besides answering such other public purposes, as facilitating the legal distribution of property by proving the connection of families. Moreover, as the deaths and the causes of mortality are scientific facts, admitting of numerical analysis; and as medicine, like the other natural sciences, is beginning to substitute numerical expressions for vague conjectures, the registration has also already afforded rich contributions, both as regards the practice and the principles of medicine. The doctrine of averages thus applied has been not inaptly styled the mathematics of medical science. We may thus study the laws of vitality, and the variation of these laws in the two sexes at different ages; and we may also study, as regards the production of disease and consequent death, or the improvement of public health, the influence of climate, comprising locality, seasons, and all other physical agencies, as well as that of occupation and civilisation. Much light will thus be thrown upon many of the most interesting questions of social statistics. Nor are these data of value alone as regards the present day, but they will serve as the means of comparison in ages to come.

This point is still further illustrated, in the following extract, by the able William Farr, Esq., to whom the arrangement of this part of the report has been wisely entrusted.

"One of the many obvious applications of the facts will be to the promotion of practical medicine. The extent to which epidemics vary in different localities, seasons, and classes of society, will be indicated by the registered diseases; and the experienced practitioner, wherever he may be placed, will learn to administer remedies with discrimination, and with due reference to the circum-

stances of the population. He will discover that the characters of diseases change, and will not treat a pneumonia in the same way in Whitechapel and in Westmoreland, if it appear, from the causes of death, that the diseases and constitution of the population present striking discrepancies. The modifications in the character of diseases, and in the medical treatment, are indicated perhaps more accurately by the prevailing epidemics than by either the temperature, the hygrometricity, or any other appreciable condition of the atmosphere; and it was Sydenham's doctrine, that the treatment of acute diseases should have a reference not only to the immediate symptoms, and to the seasons, but also to the epidemic constitutions of the year and place. A national system of registration like the present can alone indicate the characters of the diseases in every district; and determine how far the practice taught in the schools, or illustrated in crowded hospitals, and in the unhealthy parts of the metropolis, among the destitute poor, may require modification among other classes of society, and in other localities.

"The registration of the diseases of the several districts will furnish medical men with a series of valuable remedial agents. It will designate the localities where disease is most rife, and where there is the least tendency to particular classes of sickness and infirmity. In recommending a residence to patients the physician will find the registered causes of death an indispensable directory; and the utility of a sanitary map of the country, such as the returns will furnish, cannot fail to be felt in England, where a part of the population is constantly migrating from place to place in search of health. Much information has been collected respecting the influence of the English climate; but the facts will bring to light many salubrious spots hitherto unknown, and disclose the dangers which infest others unsuspected. Invalids resort to some unhealthy places; families carry their children in the autumn into districts where small-pox and measles are often epidemical, or go into parts of the country where, as the registration shows, bowel complaints and fevers are extraordinarily fatal.

"The registration of the causes of death, besides contributing to practical medicine, will give greater precision to the principles of physic. Medicine, like the other natural sciences, is beginning to abandon vague conjecture where facts can be accurately determined by observation; and to substitute numerical expressions for uncertain assertions. The advantages of this change are evident. The prevalence of a disease, for instance, is expressed by the deaths in a given time out of a given number living with as much accuracy as the temperature is indicated by a thermometer; so that when the mean population of the district is known, the rise and decline of epidemics may be traced exactly, and it will then be possible to solve the problem, whether certain tribes of epidemic disorders constantly follow others, in one determined series or cycle. Loose phrases are still current, for which numerical formulæ will be substituted. Sydenham, one of the most accurate of medical writers, in speaking of small-pox, employed such terms as these: (1661) 'It prevailed a little, but disappeared again.'—(1667-9) 'The small-pox was more prevalent in town for the first two years of this constitution than I ever remember it to have been.'—(1670-2) 'The small-pox arose; yielded to the dysentery; returned,' &c. &c. These terms admit of no strict comparison with each other; for it is difficult to say in which year the small-pox was most fatal, and impossible to compare Sydenham's experience thus expressed with the experience of other writers in other places and other ages; for 'prevailed a little,' 'raged with violence,' and similar terms, may imply either that small-pox destroyed 1, or 2, or 5, or 10 per cent of the population. The superior precision of numerical expressions is illustrated by a comparison of Sydenham's phrases with the London bills of mortality in the same years."—*First Annual Report*, pp. 86-7.

It is not our intention to review, at this time, these valuable records of facts in detail, for several reasons. Following this is an extended review of a "Report on the Sanitary Condition of the Laboring Population of Great Britain," in which very many of the results contained in these volumes are laid before the reader. Again, it is promised, in the last Re-

port, that in the next one, will be considered more fully, in proportion to the increased accumulation of data, many of the deductions already made; and this Fifth Report may be here in time for our next number. Lastly, we have devoted not a little labor to a separate paper on these topics, which comprises many of the facts exhibited in these Reports, and which we design also to lay before our readers in some form. These are the reasons which influence our present decision.

A concise view of the public health in England, in the year 1840, as exhibited in the last annual Report, is furnished in the following condensed statement. Here, too, are presented the mean temperature of each month of the year, and also a comparison of the quarterly mortality since the beginning of the Registration, showing the relative influence of the seasons:

"The mean temperature of the year 1840 was 50° of Fahrenheit. It was 0°·8 below the mean annual temperature of the 10 years 1831–40, but higher than any year since 1835. The highest temperature attained in the year was 83°, the lowest was 21°. The atmosphere was slightly moister, and the fall of rain somewhat greater than the average. The temperature of each month is given below for the three years 1838, 1839, 1840, from the observations made at the apartments of the Royal Society.

MEAN TEMPERATURE.

Months.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
	°	°	°	°	°	°	°	°	°	°	°	°	°
1838	31	35	44	45	53½	61	63	63	57	52	43	40½	48·9
1839	39	41	41	43	53	62½	62	62	58	51	46	40	49·9
1840	40	39½	39	48	..	63	62	65	57	49	46	35	50·0
1831–40	38	40½	42	47	55	62	65	64	58	52	44½	41	50 67

"A comparison of the number of deaths registered in the four quarters of the corresponding years is exceedingly instructive.

Quarters ending	March 31st.	June 30th.	September 30th.	December 31st.
1838	98,114	90,810	72,791	80,816
1839	89,739	87,965	76,280	84,995
1840	98,843	90,339	80,820	89,630

"The mortality by all causes was higher in 1840 than in 1838, and considerably higher than in 1839. Out of 1,000,000 living in 1839, only 21,856 died; while in 1840, out of the same number living, 21,856—and 1,022 more—perished. Upon referring to the deaths by different classes of causes, it will be perceived that 626 of the excess (1,022) arose in the epidemic class of diseases: the remaining excess being distributed over all the classes, except that of the violent deaths, which diminished somewhat in each of the two last years.

"The deaths from *Small-pox* fell from 16,268 in 1838, to 9,131 in 1839, and 10,434 in 1840; the deaths from *Typhus* fell from 18,775 to 15,666 and 17,177. From both diseases the mortality was less in 1840 than in 1838, but greater than in 1839. *Hooping-cough* progressively declined from 9,107 deaths, to 8,165 and to 6,132.

"*Scarlatina* was the reigning epidemic of the year 1840. According to the theory of Sydenham, it would communicate its character to the acute diseases, and constitute the medical constitution of the year.

"The deaths from this severe epidemic were in the three years:—

1838.	1839.	1840.
5,802	10,325	19,816

"And the deaths by *Scarlatina*, out of 1,000,000 living, were in the same

years 393, 683, 1,289. The epidemic was most destructive in the North-Western, North-Midland, York, Welsh, and Northern Divisions. In the North-Western Division (Lancashire, Cheshire), the annual mortality by scarlatina was 2·5 in 1,000; so that the mortality of children, who are the principal sufferers, must have been excessively high. The epidemic had not terminated, and we shall have in the next Report to trace its destructive course through another year, and in other parts.

"The deaths by *Diarrhœa*, *Cholera*, *Influenza*, and *Ague*, increased to a considerable extent; though not so as to assume the epidemic form, or to present anything very remarkable.

"The deaths from *Hydrophobia* in the three years were 24, 15, 12; and therefore not half so numerous in 1840 as in 1838.

"The mortality by the diseases of the *Nervous System* was nearly the same in the three years, *viz.*, ·003365, and ·003255, and ·003302. The mortality by *Cephalitis* and *Paralysis* was slightly higher in 1840 than in the two preceding years.

"The mortality by the diseases of the *Respiratory Organs* was 6 in 1,000; or in each of the three years ·006149, ·005989, and ·006043, The deaths ascribed to *Consumption* in each of the three years were 59,025, 59,559, and 59,923; and the mortality was ·003996, ·003939, and ·003897. The mortality from this disease declined very slightly. About 4 in 1000 persons died annually of Consumption, and about one-fifth or one-sixth part of the total deaths was by this disease.

"The mortality by diseases of the *Digestive Organs* was ·001307, ·001373, and ·001465. The increase was chiefly in *Enteritis*.

"The mortality by diseases of the *Urinary Organs* was ·000112, ·000101, and ·000110, in the three years. The deaths by *Stone* (and *Gravel*) were 320, 299, and 303; the mortality ·000022, ·000020, and ·000020. About 1 in 50,000 persons die of stone annually. It will be interesting to see whether the mortality be reduced in future years by the discoveries of surgery. The mortality by *Diabetes* is to that by *Stone* as nearly two to three.

"The deaths in *Childbed* were 2,811, 2,915, and 2,989 in the three years. The mortality increased from ·000190 to ·000193, and ·000195. To about 187 children born alive, *one mother died*. The proportion of mothers who perish at this important period is unquestionably excessive; and must suggest to every humane person the inquiry whether the education of the nurses who attend the poor in labour may not be improved!

"The number of deaths ascribed to *Rheumatism* and to diseases of the joints was 962, and 1,170 in 1840.

"If we except 'Debility,' under which head are included 'premature births'—'Dropsy' was the most fatal of the diseases of '*uncertain or variable seat*.' The deaths ascribed to dropsy were 12,342, 12,251, and 13,261 in the three years; the annual rate of mortality ·000836, ·000810, and ·000863. It is scarcely necessary to add, that according to the present views of pathologists, *Heart Disease*, or *Nephria*, would in the majority of cases be considered the primary affection. So difficult, nevertheless, appears to be the diagnosis practically, that nearly as many cases of simple 'Dropsy' are registered in the London Hospitals as out of doors in private practice."—*Fourth Annual Report*, pp. 217—219.

In the second annual Report, under the head of deaths from diseases of the respiratory organs, it is shown that the mortality from consumption is greater in females than in males, the former being 4·1 in 1000, and the latter 3·8.

"The higher mortality of English women by consumption may be ascribed partly to the in-door life which they lead, and partly to the compression, preventing the expansion of the chest, by costume. In both ways they are deprived of free draughts of vital air, and the altered blood deposits tuberculous matter with a fatal, unnatural facility. *Thirty-one thousand and ninety* English women died in one year of the incurable malady! Will not this impressive fact

induce persons of rank and influence to set their countrywomen right in the article of dress, and lead them to abandon a practice which disfigures the body, strangles the chest, produces nervous or other disorders, and has an unquestionable tendency to implant an incurable hectic malady in the frame? Girls have no more need of artificial bones and bandages than boys."—*Second Annual Report*, p. 73.

A test of the state of education in England, with reference to the knowledge of writing, is afforded by the marriage registers. The parties are not asked whether they can read or write, nor are they formally requested to write. In attesting the marriage, it is necessary to sign the register, either by writing their names or making their mark; and this record has been found a valuable and a safe criterion of the comparative state of education. In the second annual Report, Mr. Lister, in his report to her Majesty's principal Secretary of State for the Home Department, arrives at the following deduction from the data furnished:

"It appears from the foregoing Table, that in 15 English counties and in North and South Wales, more than 40 per cent. of the men were unable to write their names; and in 19 English counties, in the West Riding of Yorkshire and in Wales, more than half the women were similarly deficient; and it will appear from the subjoined Abstract of Marriages, that, in the whole of England and Wales, out of 121,083 couples married, there were 40,587 men and 58,959 women who could not write.

"It is to be observed that the education of the men, in this respect, appears to be superior to that of the women, the proportions per cent. of those who were deficient being respectively 33 and 49 for the whole kingdom, and a superiority being maintained by the men throughout every county."—*Ibid.*, p. 9.

In the third annual Report, the following results are presented:

"It appears, from the above Table, that in 13 English counties, in the West Riding of Yorkshire and in Wales, more than 40 per cent. of the men married did not write their names; and that in 19 English counties, in the West Riding of Yorkshire and in Wales, the same fact existed with respect to more than half of the women, and it will appear from the subjoined Abstract of Marriages, that in the whole of England and Wales, out of 124,329 couples, there were 41,812 men and 62,523 women who, it is to be presumed, either could not write or wrote very imperfectly.

"If the Table for the year ending June 30th, 1840, had shown results differing widely from those of the preceding year, it might reasonably have been suspected that such returns were not likely to become valuable and safe criterions of the comparative state of education, that they are drawn from too small a portion of the whole population, and are too much influenced by accident. Such, however, is not the case. A comparison of the foregoing Table with the similar Table in my Second Report, will show a remarkably close correspondence in the results, not only for the whole kingdom, but in the Metropolis, and every considerable group of counties."—*Third Ann. Rep.*, pp. 12-13.

In the fourth and last annual Report, these same results are still further confirmed:

"It appears from the average of three years that 33 men in 100, and 49 women in 100, signed with marks; it is therefore probable that only 67 men and 51 women in 100 can write their own names. There is a slight increase in the proportion of men who wrote their names."—*Fourth Annual Report*, p. 20.

These volumes abound in rich and numerous data upon questions of the highest importance relative to the natural history of man; and to resume these subjects hereafter, in pretty full detail, is our present intention.

ART. IX.—*Report to her Majesty's Principal Secretary of State for the Home Department, from the Poor Law Commissioners, on an Inquiry into the Sanitary Condition of the Laboring Population of Great Britain; with Appendices. Presented to both Houses of Parliament, by Command of Her Majesty, July*, 1842. London: 1843. 8vo. pp. 457.

THIS is part of the rich fruit that must gradually be produced from the labors of the Registrar-General of the Births, Deaths, and Marriages, including the specified cause of each death, in England, brought under notice in the preceding review. It is based partly upon the important results of this registration, which has led to a further prosecution of the subject in this new direction. The labor of this voluminous and valuable Report was performed by Edwin Chadwick, Esq., Barrister at Law, and Secretary to the Poor Law Commissioners.

In the introduction to his "Report on the Sanitary Condition of the Laboring Population, and on the Means of its Improvement," Mr. Chadwick remarks:

"Partial descriptions of the condition of the laboring classes, in respect to their residences and the habits which influence their health, afford but a faint conception of the evils which are the subject of inquiry. If only particular instances, or some groups of individual cases be adduced, the erroneous impression might be created that they were cases of comparatively infrequent occurrence. But the following tabular return made up from the registration of the causes of death in England and Wales, which is the most complete yet attained, will give a sufficiently correct conception of the extent of the evils in question, when illustrated by the evidence of eye-witnesses, the medical officers whose duty it has been to attend on the spot and alleviate them. The table comprehends the abstract of the returns of the deaths from the chief diseases, which the medical officers consider to be the most powerfully influenced by the physical circumstances under which the population is placed—as the external and internal condition of their dwellings, drainage, and ventilation."

The diseases embraced in this table, as being most powerfully influenced by local causes, are the following: Epidemic, endemic, and contagious diseases, including typhus, scarlatina, small-pox, measles, hooping-cough; diseases of the respiratory organs, as consumption, pneumonia, etc.; diseases of the brain, nerves, and senses; and diseases of the digestive organs.

"The registration of the causes of death for the year 1838 is selected, as that was the year when the report was made on the sanitary condition of the laboring population of the metropolis, which has served as the foundation of the extended inquiry.

"There are no returns, and no adequate data for returns, to show the proportion in which deaths from the several causes above specified occur amongst the population of Scotland, but there is evidence to which reference will subsequently be made tending to prove that the mortality from fever is greater in Glasgow, Edinburgh, and Dundee, than in the most crowded towns in England.

"The registered mortality from all specified diseases in England and Wales was, during the year 1838, 282,940, or 18 per thousand of the population. These deaths are exclusive of the deaths from old age, which amounted to 35,564, and the deaths from violence, which amounted to 12,055. The deaths from causes not specified were 11,970. The total amount of deaths was 342,529 for that year. In the year following the total deaths were 338,979, of which the registered deaths from old age were 35,063, and the deaths from violence 11,980. The proportion of deaths for the whole population was 21 per thousand.

"It appears that fever, after its ravages amongst the infant population, falls with the greatest intensity on the adult population in the vigor of life. The periods at which the ravages of the other diseases, consumption, small-pox, and measles, take place, are sufficiently well known. The proportions in which the diseases have prevailed in the several counties will be found deserving of peculiar attention.

"A conception may be formed of the aggregate effects of the several causes of mortality from the fact, that of the deaths caused during one year in England and Wales by epidemic, endemic, and contagious diseases, including fever, typhus, and scarlatina, amounting to 56,461, the great proportion of which are proved to be preventible, it may be said that the effect is as if the whole county of Westmoreland, now containing 56,469 souls, or the whole county of Huntingdonshire, or any other equivalent district, were entirely depopulated annually, and were only occupied again by the growth of a new and feeble population living under the fears of a similar visitation. The annual slaughter in England and Wales from preventible causes of typhus which attacks persons in the vigor of life, appears to be double the amount of what was suffered by the Allied Armies in the battle of Waterloo. It will be shown that diseases such as those which now prevail on land, did within the experience of persons still living, formerly prevail to a greater extent at sea, and have since been prevented by sanitary regulations; and that when they did so prevail in ships of war, the deaths from them were more than double in amount of the deaths in battle. But the number of persons who die is to be taken also as the indication of the much greater number of persons who fall sick, and who, although they escape, are subjected to the suffering and loss occasioned by attacks of disease. Thus it was found on the original inquiry in the metropolis, that the deaths from fever amounted to 1 in 10 of the number attacked. If this proportion held equally throughout the country, then a quarter of a million of persons will have been subjected to loss and suffering from an attack of fever during the year; and in so far as the proportion of attacks to deaths is diminished, so it appears from the reports is the intensity and suffering from the disease generally increased. It appears that the extremes of mortality at the Small-pox Hospital, in London, amongst those attacked, have been 15 per cent. and 42 per cent. But if, according to other statements, the average mortality be taken at 1 in 5, or 20 per cent., the number of persons attacked in England and Wales during the year of the return, must amount to upwards of 16,000 persons killed, and more than 80,000 persons subjected to the sufferings of disease, including, in the case of the laboring classes, the loss of labor and long-continued debility; and in respect to all classes, often permanent disfigurement, and occasionally the loss of sight.

"In a subsequent part of this report, evidence will be adduced to show in what proportion these causes of death fall upon the poorer classes as compared with the other classes of society inhabiting the same towns or districts, and in what proportions the deaths fall amongst persons of the same class inhabiting districts differently situated.

"The first extracts present the subjects of the inquiry in their general condition under the operation of several causes, yet almost all will be found to point to one particular, namely, atmospheric impurity, occasioned by means within the control of legislation, as the main cause of the ravages of epidemic, endemic, and contagious diseases among the community, and as aggravating as most other diseases. The subsequent extracts from the sanitary reports from different places will show that the impurity and its evil consequences are greater or less in different places, according as there is more or less sufficient drainage of houses, streets, roads, and land, combined with more or less sufficient means of cleansing and removing solid refuse and impurities, by available supplies of water for the purpose. Then will follow the description of the effects of overcrowding the places of work and dwellings, including the effects of the defective ventilation of dwelling-houses, and of places of work where there are fumes or dust produced. To these will be added the information collected as to the good or evil moral habits promoted by the nature of the residence. These

will form so many successive sections of the report, and will be followed by information in respect to the means available for the prevention of the evils described, and an exposition of the present state of the law for the protection of the public health, and of modifications apparently requisite to secure the desired results."—Pp. 1, 3, 4.

SECTION I. treats of the general condition of the residences of the laboring classes where disease is found to be the most prevalent; and these attendant circumstances are found to be always removable. The following extracts in the language of eye-witnesses, will serve to show the general condition of the residences of the working classes. Mr. Harding, medical officer of the Epping Union, states—

"The state of some of the dwellings of the poor is most deplorable as it regards their health, and also in a moral point of view. As it relates to the former, many of their cottages are neither wind nor water-tight. It has often fallen to my lot to be called on to attend a labor where the wet has been running down the walls, and light to be distinguished through the roof, and this in the winter season, with no fire-place in the room. As it relates to the latter, in my opinion a great want of accommodation for bed-rooms often occurs, so that you may frequently find the father, mother, and children all sleeping in the same apartment, and in some instances the children having attained the age of 16 or 17 years, and of both sexes; and if a death occurs in the house, let the person die of the most contagious disease, they must either sleep in the same room, or take their repose in the room they live in, which most frequently is a stone or brick floor, which must be detrimental to health."—P. 14.

In respect to Toddington, we have the following account:

"In this town fever prevailed during the last year, and, from the state of the dwellings of the persons I called on, this could not be wondered at. Very few of the cottages were furnished with privies that could be used, and contiguous to almost every door a dung heap was raised on which every species of filth was accumulated, either for the purpose of being used in the garden allotments of the cottagers, or to be disposed of for manure. Scarcely any cottage was provided with a pantry, and I found the provisions generally kept in the bedrooms. In several instances I found whole families, comprising adult and infant children with their parents, sleeping in one room."—P. 12.

Behold the condition of that part of Edinburgh and Glasgow, in which the great mass of the fever cases occurred:

"We entered a dirty low passage like a house door, which led from the street through the first house to a square court immediately behind, which court, with the exception of a narrow path around it leading to another long passage through a second house, was occupied entirely as a dung recepticle of the most disgusting kind. Beyond this court the second passage led to a second square court, occupied in the same way by its dunghill; and from this court there was yet a third passage leading to a third court, and third dungheap. There were no privies or drains there, and the dungheaps received all the filth which the swarm of wretched inhabitants could give; and we learned that a considerable part of the rent of the houses was paid by the produce of the dungheaps. Thus, worse off than wild animals, many of which withdraw to a distance and conceal their ordure, the dwellers in these courts had converted their shame into a kind of money by which their lodging was to be paid. The interiors of these houses and their inmates corresponded with the exteriors. We saw half-dressed wretches crowding together to be warm; and in one bed, although in the middle of the day, several women were imprisoned under a blanket, because as many others, who had on their backs all the articles of dress that belonged to

the party, were then out of doors in the streets. This picture is so shocking that, without ocular proof, one would be disposed to doubt the possibility of the facts; and yet there is perhaps no old town in Europe that does not furnish parallel examples. London, before the great fire of 1666, had few drains, and had many such scenes, and the consequence was, a pestilence occurring at intervals of about 12 years, each destroying at an average about a fourth of the inhabitants. Who can wonder that pestilential disease should originate and spread in such situations?"—P. 24.

Section II. treats of the public arrangements external to the residences by which the sanitary condition of the laboring population is affected. Under this head are considered the following topics: Town drainage of streets and houses; street and road cleansing; house cleansing, as connected with street cleansing and sewerage; supplies of water; and sanitary effect of land drainage. Of these defects, those which are most important and which come most directly within practical legislative control, are the neglect of drainage and of the removal of the noxious refuse of houses, streets, and roads.

The sanitary effects obtainable by an efficient town drainage, are strikingly illustrated by numerous examples, more especially as regards typhus fever. As regards street and road cleansing, no less strongly marked effects on the population have followed in many places.

"To show the value of police regulations in removing any improper accumulations of foul and putrid matter, where a deadly poison is generated, I have a distinct recollection, when the cholera appeared in Macclesfield, not only was that fatal disease arrested somewhat in its progress by the active vigilance exercised by the gentlemen in seeing that in their several districts all offending deposits were removed, and all pest-houses cleansed, that for several months after the town had undergone this salutary inspection, and the people made alive to the pernicious effects of the dunghill, fever of the worst or contagious form scarcely appeared in the usual localities, although it was at the autumnal season of the year. I likewise noticed in spring-time following, when the filth had begun to accumulate on the surface in certain parts of the town, a severe return of contagious diseases, fever in all its stages, and a very fatal epidemic small-pox."—P. 37.

The following description belongs to Manchester, but it applies equally to Leeds, Liverpool, Glasgow, and other places:

"That the filthy and disgraceful state of many of the streets in these densely populated and neglected parts of the town where the indigent poor chiefly reside cannot fail to exercise a most baneful influence over their health is an inference which experience has fully proved to be well founded; and no fact is better established than that a large proportion of the causes of fever which occur in Manchester originate in these situations. Of the 182 patients admitted into the temporary fever hospital in Balloon-street, 135 at least came from unpaved or otherwise filthy streets, or from confined and dirty courts and alleys. Many of the streets in which cases of fever are common are so deep in mire, or so full of hollows and heaps of refuse, that the vehicle used for conveying the patients to the House of Recovery often cannot be driven along them, and the patients are obliged to be carried to it from considerable distances. Whole streets in these quarters are unpaved and without drains or main-sewers, are worn into deep ruts and holes, in which water constantly stagnates, and are so covered with refuse and excrementitious matter as to be almost impassable from depth of mud, and intolerable from stench. In the narrow lanes, confined courts and alleys, leading from these, similar nuisances exist, if possible, to a still greater extent; and as ventilation is here more obstructed, their effects are still more pernicious.

In many of these places are to be seen privies in the most disgusting state of filth, open cesspools, obstructed drains, ditches full of stagnant water, dunghills, pigsties, &c., from which the most abominable odors are emitted. But dwellings perhaps are still more insalubrious in those cottages situated at the backs of the houses fronting the street, the only entrance to which is through some nameless narrow passage, converted generally, as if by common consent, into a receptacle for ordure and the most offensive kinds of filth. The doors of these hovels very commonly open upon the uncovered cesspool, which receives the contents of the privy belonging to the front house, and all the refuse cast out from it, as if it had been designedly contrived to render them as loathsome and unhealthy as possible. Surrounded on all sides by high walls, no current of air can gain access to disperse or dilute the noxious effluvia, or disturb the reeking atmosphere of these areas. Where there happens to be less crowding, and any ground remains unbuilt upon, it is generally undrained, contains pools of stagnant water, and is made a depôt for dunghills and all kinds of filth."—P. 38.

The following extract, which is part of the report on Leeds, shows the vile condition of portions of all cities in the world:

"The courts and *culs-de-sac* exist everywhere. The building of houses back to back occasions this in a great measure. It is in fact part of the economy of buildings that are to pay a good per centage. In one *cul-de-sac*, in the town of Leeds, there are 34 houses, and in ordinary times, there dwell in these houses 340 persons, or ten to every house; but as these houses are many of them receiving houses for itinerant laborers, during the periods of hay-time and harvest and the fairs, at least twice that number are then here congregated. The name of this place is the Boot and Shoe-yard, in Kirkgate, a location from whence the Commissioners removed, in the days of the cholera, 75 cart-loads of manure, which had been untouched for years, and where there now exists a surface of human excrement of very considerable extent, to which these impure and unventilated dwellings are additionally exposed. This property is said to pay the best annual interest of any cottage property in the borough."—P. 41.

As regards the sanitary effect of land drainage, no evidence need be here adduced. All the world, and every age of man's history, testify to the advantages of skilful and effectual drainage in augmenting not only salubrity, but productiveness of soil.

Section III. discusses the circumstances chiefly in the internal economy and bad ventilation of places of work, and of workmen's dwellings, in connection with the domestic habits affecting their health. These questions, like all the rest, are most abundantly illustrated by the most varied testimony; but our limits preclude any extended extracts. The evils arising from the bad ventilation of places of work, are very distinctly brought under view, by the consideration of its effects upon a particular class of laborers, the journeymen tailors.

Mr. Thomas Brownlow, aged 52, who had been a journeyman tailor, and worked at the largest establishments in London, where they employ from 100 to 250 men, but who now works for himself, gave evidence of which the following is part:

"Will you describe the places of work, and the effects manifested in the health of the workmen?—The place in which we used to work at Messrs. Allen's was a room where 80 men worked together. It was a room about 16 or 18 yards long, and 7 or 8 yards wide, lighted with skylights; the men were close together, nearly knee to knee. In summer time the heat of the men and the heat of the irons made the room 20 or 30 degrees higher than the heat outside; the heat was then

most suffocating, especially after the candles were lighted. I have known young men, tailors from the country, faint away in the shop from the excessive heat and closeness; persons, working-men, coming into the shop to see some of the men, used to complain of the heat, and also of the smell as intolerable; the smell occasioned by the heat of the irons and the various breaths of the men really was at times intolerable. The men sat as loosely as they possibly could, and the perspiration ran from them from the heat and the closeness. It is of frequent occurrence in such workshops that light suits of clothes are spoiled from the perspiration of the hand, and the dust and flue which arises darkening the work. I have seen 40*l.* or 50*l.* worth of work spoiled in the course of the summer season from this cause.

"In what condition are these work-places in winter?—They are more unhealthy in winter, as the heat from the candles and the closeness is much greater. Any cold currents of air which come in give annoyance to those who are sitting near the draught. There is continued squabbling as to the windows being opened; those who are near the windows, and who do not feel the heat so much as the men near the stoves, objecting to their being opened. The oldest, who had been inured to the heat, did not like the cold, and generally prevailed in keeping out the cold or the fresh air. Such has been the state of the atmosphere, that in the very coldest nights large thick tallow candles (quarter of a pound candles) have melted and fallen over from the heat.

"What was the effect of this state of the work-places upon the habits of the workmen?—It had had a very depressing effect on the energies; that was the general complaint of those who came into it. Many could not stay out the hours, and went away earlier. Those who were not accustomed to the places generally lost appetite. The natural effect of the depression was, that we had recourse to drink as a stimulant. We went into the shop at six o'clock in the morning; but at seven o'clock, when orders for the breakfast were called for, gin was brought in, and the common allowance was half-a-quartern. The younger hands did not begin with gin.

"Was gin the first thing taken before any solid food was taken?—Yes, and the breakfast was very light; those who took gin generally took only half-a-pint of tea and half a twopenny loaf as breakfast."—Pp. 98, 99.

Liquor was again brought in at 11 o'clock, at 3 o'clock, and at 5 o'clock, at each of which times either gin or beer was taken. At 7 o'clock the shop was closed, when nearly all the young men went to the public houses.

At Glasgow, the Report says that some tailors' workshops were carefully ventilated, and the immediate results were as satisfactory as had been anticipated.

On the milliners and dressmakers employed at the larger workshops of the metropolis, like effects are produced by similar defective ventilation and overcrowding of rooms, aided by the deterioration of the air, arising from the use of candles or gas-lamps at night work.

The mortality of hospitals is likewise much affected by position and internal economy. The diminution in the mortality of the Hôtel Dieu, from better ventilation, is thus noticed by Parent Du Châtelet:

"The mortality has diminished in the Hôtel Dieu in remarkable proportions. Without saying anything of the enlargement of the windows, of the warm clothing, of a better system of heating the apartments, are we to count for nothing the destruction of all the high houses which surrounded the Hôtel Dieu on every side? In our opinion the pure and dry air which circulates now in every part, the sun which penetrates there, the stoves which have been erected, have as much contributed to its healthiness as the suppression of the amphitheatres of anatomy which were in its neighborhood."—Pp. 106, 107.

Next, the effects of the defective ventilation of the sleeping rooms of the working classes are exemplified. In regard to the lodging-places of the miners, the following is the account given by William Eddy, one of their own number:

"I went to work in Greenside four years. Our lodging-rooms were such as not to be fit for a swine to live in. In one house there were 16 bedsteads in the room up stairs, and 50 occupied these beds at the same time. We could not always get all in together, but we got in when we could. Often three at a time in the bed, and one at the foot. I have several times had to get out of bed, and sit up all night to make room for my little brothers, who were there as washers. There was not a single flag or board on the lower floor, and there were pools of water 12 inches deep. You might have taken a coal-rake and raked off the dirt and potatoe peelings six inches deep. At one time we had not a single coal. After I had been there two years, rules were laid down, and two men were appointed by the master to clean the house up stairs twice a week. The lower apartment was to be cleaned twice a day. Then the shop floor was boarded, and two tables were placed in the shop. After that two more shops were fitted up, but the increase of workmen more than kept up with the increased accommodation. The breathing at night when all were in bed was dreadful. The workmen received more harm from the sleeping-places than from the work. There was one pane of glass which we could open, but it was close to a bed-head.

"The mines at Greenside were well ventilated, and in that respect there was nothing to complain of.

"In the winter time the icicles came through the roof, and within 12 inches of the people sleeping in bed. During a thaw, the water dropped plentifully into the beds. In the upper beds the person sleeping next to the wall cannot raise his head or change his shirt."—Pp. 111, 112.

It further appears that the worst effects are also due to the defective ventilation and overcrowding of private dwellings. A specimen of the destitution in Scotland, in this respect, is afforded in the Report of Dr. Scott Alison on Tranent:

"In many houses in and around Tranent, fowls roost on the rafters and on the tops of the bedsteads. The effluvia in these houses are offensive, and must prove very unwholesome. It is scarcely necessary to say that these houses are very filthy. They swarm likewise with fleas. Dogs live in the interior of the lowest houses, and must, of course, be opposed to cleanliness. I have seen horses in two houses in Tranent inhabiting the same apartment with numerous families, One was in Dow's Bounds. Several of the family were ill of Typhus fever, and I remember the horse stood at the back of the bed. In this case the stench was dreadful. In addition to the horse there were fowls, and I think the family was not under ten souls. The father died of typhus on this occasion. The families of most of the laboring people are crowded, in consequence of the smallness of the apartment. Where there are many children, it is common for 10 or 12 people to inhabit one apartment, and for four children to lie in one bed, both in health and sickness. When a collier has few or no children, he sometimes takes single men and women as lodgers."—Pp. 121, 122.

This over-crowding and want of separate apartments also exert the most unhappy influence upon the morals of the population. Mr. Riddall Wood, when examined on this point, according to his knowledge obtained in the course of his visits from house to house in the various towns, replied—

"In what towns did you find instances of the greatest crowding of the habitations?—In Manchester, Liverpool, Ashton-under-Lyne, and Pendleton. In a cellar in Pendleton, I recollect there were three beds in the two apartments of which the habitation consisted, but having no door between them, in one of which a man and his wife slept; in another, a man, his wife and child; and in a third two unmarried females. In Hull I have met with cases somewhat similar. A mother about 50 years of age, and her son I should think 25, at all events above 21, sleeping in the same bed, and a lodger in the same room. I have two or three instances in Hull in which a mother was sleeping with her grown up son, and in most cases there were other persons sleeping in the same room in another bed. In a cellar in Liverpool, I found a mother and her grown-up daughters sleeping on a bed of chaff on the ground in one corner of the cellar, and in the other corner three sailors had their bed. I have met with upwards of 40 persons sleeping in the same room, married and single, including, of course, children and several young adult persons of either sex. In Manchester I could enumerate a variety of instances in which I found such promiscuous mixture of the sexes in sleeping-rooms. I may mention one: a man, his wife and child sleeping in one bed; in another bed, two grown up females; and in the same room two young men, unmarried. I have met with instances of a man, his wife, and his wife's sister, sleeping in the same bed together. I have known at least half-a-dozen cases in Manchester in which that has been regularly practised, the unmarried sister being an adult.

"In the course of your own inquiry, how many instances, if you were to look over your Notes, of persons of different sexes sleeping promiscuously, do you think you met with?—I think I am speaking within bounds when I say I have amongst my memoranda above 100 cases, including, of course, cases of persons of different sexes sleeping in the same room.

"Was it so common as to be in nowise deemed extraordinary or culpable amongst that class of persons?—It seemed not to be thought of. As a proof of this I may mention one circumstance which just occurs to me:—Early in my visitation of Pendleton, I called at the dwelling of a person whose sons worked with himself in a colliery. It was in the afternoon, when a young man, one of the sons, came down stairs in his shirt, and stood before the fire where a very decently-dressed young female was sitting. The son asked his mother for a clean shirt, and on its being given to him, very deliberately threw off the shirt he had on, and after warming the clean one, put it on. In another dwelling in Pendleton, a young girl 18 years of age, sat by the fire in her chemise during the whole time of my visit. Both these were houses of working people (colliers), and not by any means of ill-fame."—Pp. 124–125.

Mr. Wood further illustrated the demoralization attendant upon these circumstances; and, in this statement, he was corroborated by Mr. Baker relative to the laboring classes in Leeds:

"In the houses of the working classes, brothers and sisters, and lodgers of both sexes, are found occupying the same sleeping-room with the parents, and consequences occur which humanity shudders to contemplate. It is but three or four years ago since a father and daughter stood at the bar of the Leeds Sessions as criminals, the one in concealing, and the other in being an accessary to concealing, the birth of an illegitimate child, born on the body of the daughter by the father; and now, in November, 1841, one of the Registrars of Leeds has recorded the birth of an illegitimate child born on the body of a young girl, only 16 years of age, who lived with her mother, who cohabited with her lodger, the father of this child, of which the girl had been pregnant five months, when the mother died."—P. 126.

It is these various noxious physical agencies that seem to hold the foremost place as antecedents to fever. As regards the causes of fever, it is still controverted whether it is produced by filth and vitiated atmosphere, or

whether these causes are merely predisposing to the reception of the fever, or the means of propagating it, though really dependent on some superior or specific cause. The Commissioners, referring to the various local reports, say:

"These reports have awakened in us the sad conviction that many localities are quite devoid of even the most simple ideas on public health; the inhabitants live surrounded by marshes, drains, stagnant pools, manure heaps, without having the slightest idea of the danger they are incurring. Indeed, many of them blindly speculate in these heaps of infection, increasing the manure which is to enrich their fields at the expense of their health, and often of their lives."

"The Commissioners observe,—"Most of the improvements in public health have been brought about through the experience and science united in our large cities; so much so that now epidemics often come to us from the rural districts. These epidemics are generally much less fatal than formerly, but are still very prevalent even in the wealthiest and the most civilized departments. It would be an important problem to solve, what are the causes which produce these epidemics in the agricultural as well as in the manufacturing counties, as in ancient Normandy and Picardy. One cause is certainly the unhealthiness of the houses. The inhabitants of these districts are, in general, well fed, well clothed, but ill lodged. We are surprised to find in the midst of a fertile plain wide districts covered with luxuriant vegetation, villages buried in the ground, *smothered* with large trees, and cottages constructed without any art or plan, and almost entirely without windows.' The Commissioners state, further,—'If you wish to have a robust and healthy people, you must have a care for their physical education, their houses, and their modes of living. Do not allow generation after generation to be depressed under the evil effects of recurring epidemics, which must eventually ruin the strongest constitutions, as is seen to be the case in marshy and ill-drained districts, where fevers, *goitres*, and scrofulas constantly prevail.'

"In another report made on the proceedings of the Conseil de Salubrité, the diseases prevalent amongst the population of the towns are adverted to:—'We must be like the men so well painted by the Psalmist, to reject such evidence—*eyes have they, and see not.* How shall we explain, or rather to what shall we attribute the difference that is remarked between the mortality of one quarter and that of another quarter of the same town; of one street and that of another street of the same quarter or of the same village; or, lastly, the difference that is observed in this respect between the houses of the same street and those houses which are completely isolated? Misery, it is replied to us, is the cause. Yes, without doubt, misery is a powerful cause; but it is so especially when it is driven back into the most insalubrious quarters, streets, and houses; when it lives habitually in the midst of filth and dirt, that is to say, in the midst of an infected atmosphere; and when there is no misery, or when it exists in the same degree in the quarters, in the villages, in the streets, and in the houses with which the comparison is made; and, stronger still, when poverty is met with precisely there where there is the least mortality; in what is to be found the cause of this difference, if it is not in the insalubrity of the dwelling-places.'

"The report on the local epidemics concludes by earnestly recommending to the government—'That sanitary measures be adopted by means of which the constitution of the people may be renewed, and their longevity increased. If this recommendation be fulfilled, we may then hope to see the condition of some of the departments ameliorated, in which now the population is so degenerated that the men seem to diminish in size each time they are measured for the conscriptions.'"—Pp. 151-2.

Section IV. shows the comparative chances of life in different classes of the community; and, as this difference is extraordinarily great, it follows that insurance tables made up from the gross returns of the mortality among large classes, living under circumstances widely diverse, cannot be free from grave errors. It is shown, for example, that the

average chances of life of the people of one class, in one street, will be fifteen years, while in a street immediately adjacent, this probability is as high as sixty years; and, in the same town, it is further found that, in one district, the mortality is only one out of every fifty-seven of the population, while, in another, the annual ratio is as high as one in twenty-eight. To illustrate this point, the following extract will suffice:

LEEDS BOROUGH.

No. of Deaths.		Average Age of Deceased.
79	Gentlemen and persons engaged in professions, and their families	44
824	Tradesmen, farmers, and their families	27
3,395	Operatives, labourers, and their families	19

"But in Liverpool (which is a commercial and not a manufacturing town) where, however, the condition of the dwellings is reported to be the worst, where, according to the report of Dr. Duncan, 40,000 of the population live in cellars, where 1 in 25 of the population are annually attacked with fever,—there the mean chances of life appear from the returns to the Registrar-General to be still lower than in Manchester, Leeds, or amongst the silk weavers in Bethnal Green. During the year 1840, the deaths, distinguishable in classes, were as follows:—

LIVERPOOL, 1840.

No. of Deaths.		Average Age of Deceased.
137	Gentry and professional persons, &c.	35 years.
1,738	Tradesmen and their families	22
5,597	Laborers, mechanics, and servants, &c.	15

"Of the deaths which occurred amongst the laboring classes, it appears that no less than 62 per cent. of the total number were deaths under five years of age. Even amongst those entered as shopkeepers and tradesmen, no less than 50 per cent. died before they attained that period. The proportion of mortality for Birmingham, where there are many insalubrious manufactories, but where the drainage of the town and the general condition of the inhabitants is comparatively good, was in 1838, 1 in 40; whilst in Liverpool it was 1 in 31."—Pp. 159, 160.

Mr. Chadwick also shows that high mortality is not essential to towns, and he adduces instances of greater health in urban than in rural districts. He says—

"An impression is often prevalent that a heavy mortality is an unavoidable condition of all large towns, and of town populations in general. It has, however, been shown that groups of cottages on a high hill, exposed to the most salubrious breezes, when cleanliness is neglected, are often the nests of fever and disease, as intense as the most crowded districts. The mortuary returns of particular districts (in the essentials of drainage, cleansing, and ventilation, to which it is practicable to make other districts approximate, and that too with reductions of existing charges), prove that a high degree of mortality does not invariably belong to the population of all towns, and probably not necessarily to any, even where the population is engaged in manufactures. The proportion of deaths appears in some of the suburbs of the metropolis (as at Hackney), and of Manchester and Leeds, to be lower than amongst the highest classes in two of the agricultural counties."—Pp. 167, 168.

Nothing, however, is better established than the influence of local circumstances on mortality. In Bath, for instance, as appears from the statement of the Rev. W. Elvin, while the lower classes were suffering

severely from fever and contagious diseases, the higher ones possessed an almost complete exemption :

"The deaths from fever and contagious diseases I found to be almost exclusively confined to the worst parts of the town. An epidemic small-pox raged at the end of the year 1837, and carried off upwards of 300 persons; yet of all this number I do not think there was a single gentleman, and not above two or three tradesmen. The residences of the laboring classes were pretty equally visited, disease showing here and there a predilection for particular spots, and settling with full virulence in Avon-street and its offsets. I went through the registers from the commencement, and observed that, whatever contagious or epidemic diseases prevailed,—fever, small-pox, influenza,—this was the scene of its principal ravages; and it is the very place of which every person acquainted with Bath would have predicted this result. Everything vile and offensive is congregated there. All the scum of Bath—its low prostitutes, its thieves, its beggars—are piled up in the dens, rather than houses, of which the street consists. Its population is the most disproportioned to the accommodation of any I have ever heard; and to aggravate the mischief, the refuse is commonly thrown under the staircase; and water more scarce than in any quarter of the town. It would hardly be an hyperbole to say that there is less water consumed than beer; and altogether it would be more difficult to exaggerate the description of this dreadful spot than to convey an adequate notion to those who have never seen it. A prominent feature in the midst of this mass of physical and moral evils, is the extraordinary number of illegitimate children; the offspring of persons who in all respects live together as man and wife. Without the slightest objection to the legal obligation, the moral degradation is such that marriage is accounted a superfluous ceremony, not worth the payment of the necessary fees; and on one occasion, when it was given out that these would be dispensed with, upwards of 50 persons from Avon-street, who had lived together for years, voluntarily came forward to enter into a union. And thus it invariably happens in crowded haunts of sin and filth, where principle is obliterated, and where public opinion, which so often operates in the place of principle, is never heard; where, to say truth, virtue is treated with the scorn which in better society is accorded to vice. I have been rendered familiar with these places by holding a curacy in the midst of them for upwards of a year, and my duty as chaplain to the Union, in visiting the friends of paupers or discharged paupers themselves, keeps up the knowledge I then contracted.

"I think these facts supply us with important conclusions. Whether we compare one part of Bath with another, or Bath with other towns, we find health rising in proportion to the improvement of the residences; we find morality, in at least a great measure, following the same law, and both these inestimable blessings within the reach of the legislature to secure. When viewed in this light, these investigations, so often distressing and disgusting, acquire dignity and importance."—Pp. 169, 170.

Mr. Secretary Chadwick next shows that all improvements in the health of large towns are chiefly confined to improved districts; and this he further confirms by the evidence of M. Villermé relative to Paris. On the authority of the distinguished Villermé, he gives the following quotation :

"Some idea may be formed of the dirtiness of the streets of Paris, towards the end of the fourteenth century, from the words of an ordinance of Charles VI. issued in 1388, 'And whereas the pavements of Paris are much injured and fallen into decay, so that in many places no horse or carriage can go without very great danger and inconvenience, and whereas this town has long been, and still is, full of dirt, rubbish, and ordure, which each person has left at his own door, so that it is a great horror, and a great displeasure to all persons of respectability and honor, and a great scandal and shame to this city, and a great

grief and prejudice to the human beings dwelling in and frequenting the said city, who by the infection of the stinking mass of filth, have fallen in times past into great illness and infirmities of body, and great mortality.'"—P. 173.

At this period, the general annual mortality of Paris is estimated at one-twentieth or a twenty-second part of the whole population.

Mr. C. further gives, in the history of Geneva, during the last three centuries, an instance of the progressive improvement in the social condition of the population concurrently with its increase in numbers. He also shows that, in those districts in which the mortality is highest, the number of births is more than sufficient to compensate the deaths, and that pestilence or excessive mortality does not diminish population, and is, consequently, not a corrective of the pressure of population. This is satisfactorily established by the registration of England, for the year ending June 30, 1840. Dividing the forty-two counties of England into three parts, Mr. Chadwick speaks thus—

"We here find that in the 14 counties where proportionate mortality has been the least, the 184 deaths in 10,000 persons are made up by the 297 births; hence 113, or more than 1 per cent., is added by new births to the existing population. In the 14 intermediate counties where the deaths on every 10,000 persons increase to 208, there the deaths are again made up by 302 births, and 94, or close upon 1 per cent., are again added to the population. In the 14 counties where the increase of the population is the greatest, the deaths in every 10,000 persons are increased to 259, but here also we find that the births are again sufficient to make up for the deaths; they are 348, and increase the population by 89, or less than 1 per cent.

"Hence, if the number of births in each 10,000 persons of the 14 counties where the mortality has been the greatest had taken place amongst every 10,000 persons of the counties where the mortality has been the least, then the increase of population in these latter by births, instead of being 113, would have been 164."—P. 183.

The same law is established in France and most of the other countries of Europe; but we shall not here pursue this part of the subject any farther, as we propose resuming it in another form hereafter.

This inquiry also proves that the strength of the population may be deteriorated by disease without diminishing its numbers.

"The important general fact," says Mr. Chadwick, "of the proportion of adult physical strength to the increased duration of life, or improved sanitary condition of the individuals, is verified by the examinations of the individuals of different classes. M. Villermé states that the difference of strength between classes such as those in which we have seen that the value of life differs, is well known to the officers engaged in recruiting the army, but no one had collected the facts to determine the precise difference. The time allowed to M. Villermé only enabled him to do so at Amiens. The result was, that the men of from 20 to 21 years of age were found the more frequently unfit for the trade of arms from their stature, constitution, and health, as they belonged to the poorer classes of the manufacturing laborers. In order to obtain 100 men fit for military service, it was necessary to have as many as 343 men of the poorer classes; whilst 193 conscripts sufficed of the classes in better circumstances. Analogous facts were observed in the greater part of the towns in France in which he conducted his official investigations.

"In the evidence of recruiting officers, collected under the Factory Commission of Inquiry, it was shown that fewer recruits of the proper strength and stature for military service are obtainable now than heretofore from Manchester. I have been informed that of those laborers now employed in the most

important manufactories, whether natives or migrants to that town, the sons who are employed at the same work are generally inferior in stature to their parents. Sir James M'Grigor, the Director-general of the Army Medical Board, stated to me the fact, that 'A corps levied from the agricultural districts in Wales, or the northern counties of England, will last longer than one recruited from the manufacturing towns from Birmingham, Manchester, or near the metropolis.' Indeed, so great and permanent is the deterioration, that out of 613 men enlisted, almost all of whom came from Birmingham and five other neighboring towns, only 238 were approved for service.

"The chances of life of the laboring classes of Spitalfields are amongst the lowest that I have met with, and there it is observed of weavers, though not originally a large race, that they have become still more diminutive under the noxious influences to which they are subject. Dr. Mitchell, in his report on the condition of the hand-loom weavers, adduces evidence on this point. One witness well acquainted with the class, states, 'They are decayed in their bodies; the whole race of them is rapidly descending to the size of Liliputians. You could not raise a grenadier company amongst them all. The old men have better complexions than the young.' Another witness who says there were once men as well made in the weaver trade as any other, 'recollects the Bethnal Green and Spitalfields regiment of volunteers during the war as good-looking bodies of men, but doubts if such could be raised now.' Mr. Duce concurs in the fact of the deterioration of their size and appearance within the last thirty years, and attributes it to bad air, bad lodging, bad food, 'which causes the children to grow up an enfeebled and diminutive race of men.' (*Vide* Evidence of the Medical Officers of the District, *ante*.)"—Pp. 185–6.

Section V. treats of the pecuniary burdens created by the neglect of sanitary measures. Upon this point, Mr. C. remarks:

"The more closely the subject of the evils affecting the sanitary condition of the laboring population is investigated, the more widely do their effects appear to be ramified. The pecuniary cost of noxious agencies is measured by data within the province of the actuary, by the charges attendant on the reduced duration of life, and the reduction of the periods of working ability or production by sickness; the cost would include also much of the public charge of attendant vice and crime which come within the province of the police, as well as the destitution which comes within the province of the administrators of relief. Of the pecuniary effects, including the cost of maintenance during the preventible sickness, any estimate approximating to exactness could only be obtained by very great labor, which does not appear to be necessary.

"To whatever extent the probable duration of the life of the working man is diminished by noxious agencies, I repeat a truism in stating that to some extent so much productive power is lost; and in the case of destitute widowhood and orphanage burdens are created and cast either on the industrious survivors belonging to the family, or on the contributors to the poor's rates during the whole of the period of the failure of such ability. With the view to judge of the extent to which such burdens are at present cast upon the poor's rates, I have endeavored to ascertain the average age at which death befell the heads of those families of children who with the mothers have been relieved on the ground of destitution, in eight of the unions where the average age of the mortality prevalent amongst the several classes of the community has been ascertained."—Pp. 188, 189.

From this statistical investigation, he arrives at the conclusion that the great mass of premature widowhood and of orphanage is to be ascribed to removable causes. He adds—

"This premature widowhood and orphanage is the source of the most painful descriptions of pauperism—the most difficult to deal with; it is the source of a

constant influx of the independent into the pauperised and permanently dependent classes. The widow, where there are children, generally remains a permanent charge; re-marriages amongst those who have children are very rare; in some unions they do not exceed one case in twenty or thirty. By the time the children are fit for labor and cease to require the parents' attention, the mothers frequently become unfit for earning their own livelihood, or habituated to dependence, and without care to emerge from it. Even where the children are by good training and education fitted for productive industry, when they marry, the early familiarity with the parochial relief makes them improvident, and they fall back upon the poor's rates on the lying-in of their wives, on their sickness, and for aid on every emergency. In every district the poor's rolls form the pedigrees of generations of families thus pauperized. The total number of orphan children on account of whose destitution relief was given from the poor's rates in the year ended Lady-day, 1840, was 112,000."—P. 190.

As regards the effects of noxious physical agencies on the moral and intellectual condition of the rising generation, the Secretary of the Commission justly observes—

"I might adduce the evidence of the teachers of the pauper children at Norwood to show that a deteriorated physical condition does in fact greatly increase the difficulty of moral and intellectual cultivation. The intellects of the children of such inferior physical organization are torpid; it is comparatively difficult to gain their attention or to sustain it; it requires much labor to irradiate the countenance with intelligence, and the irradiation is apt to be transient. As a class they are comparatively irritable and bad tempered. The most experienced and zealous teachers are gladdened by the sight of well-grown and healthy children, which present to them better promise that their labors will be less difficult and more lasting and successful. On one occasion a comparison was made between the progress of two sets of children in Glasgow, the one set taken from the wynds and placed under the care of one of the most skilful and successful infant schoolmasters, the other a set of children from a more healthy town district and of a better physical condition, placed under the care of a pupil of the master who had charge of the children from the wynds. After a trial for a sufficient time, the more experienced master acknowledged the comparative inferiority of his pupils, and his inability to keep them up to the pace of the better bodily conditioned children.

"The facts indicated will suffice to show the importance of the moral and political considerations, viz., that the noxious physical agencies depress the health and bodily condition of the population, and act as obstacles to education and to moral culture; that in abridging the duration of the adult life of the working classes they check the growth of productive skill, and abridge the amount of social experience and steady moral habits in the community: that they substitute for a population that accumulates and preserves instruction and is steadily progressive, a population that is young, inexperienced, ignorant, credulous, irritable, passionate, and dangerous, having a perpetual tendency to moral as well as physical deterioration."—Pp. 202, 203.

Lastly, the pecuniary cost of disease compared with that of the means of prevention, is considered, in which the vast excess of the former, without reference to the waste of human life, is shown.

Section VI. brings under view the evidence of the effects of preventive measures in raising the standard of health and the chances of life. This point has been already established in the preceding investigation; and "it admits of proof," says Mr. Chadwick, "that a higher standard of health and comfort is attainable for them even at a less expense than that in which they now live in disease and misery." Evidence of the

general fact is afforded in the experience of the effects of sanitary measures in banishing the spontaneous diseases of crowded prisons; but even the filth, bad ventilation, and physical suffering of jails, as described by the philanthropic Howard, are, at this time, exceeded by the cellar population of the working people of Liverpool, Manchester, Leeds, and a large portion of London. It is now ascertained that the health of prisoners, notwithstanding they come, as a class, from the worst localities, and are, consequently, below the average of health when they enter the prisons, is, in general, much higher than that of the surrounding population. At the Glasgow Bridewell, it is found, as the prisoners are weighed on their entrance and at their discharge, that they have, on the average, gained in weight. In the prisons of France, it is shown by M. Villermé that, an equally striking diminution has taken place, chiefly from stricter attention to cleanliness, diet, and ventilation. Further testimony in favor of the efficiency of preventive measures is furnished by the naval medical service.

"So dreadful," says Mr. Chadwick, "was once the condition of the navy that, in the year 1726, when Admiral Hosier sailed with seven ships of the line to the West Indies, he buried his ships' companies twice, and died himself of a broken heart. Amongst the pictures then presented, as in Anson's Voyages, 1740–44, were those of deaths to the amount of eight or ten a-day in a moderate ship's company; bodies sewn up in hammocks and washing about the decks, for want of strength and spirit on the part of the miserable survivors to cast them overboard. Dr. Johnson, in the year 1778, thus describes a sea life:—'As to the sailor, when you look down from the quarter-deck to the space below, you see the utmost extremity of human misery; such crowding, such filth, such stench!' 'A ship is a prison, with the chance of being drowned,—it is worse, worse in every respect; worse air, worse food, worse company.'"—Pp. 219, 220.

It is remarked by Dr. Wilson, in his preface to the Naval Medical Returns, "that, within the limits of the South American command, the Centurion, exactly a century ago, lost, in a few weeks, 200 out of 400 men, by scurvy. During the years from 1830 to 1836, the British *squadron* employed in South America, lost, by disease of every description, only 115 out of 17,254 men.

But the scurvy, once so fatal in the navy, is now almost unknown in men-of-war. It is a popular opinion in the navy that lemon juice in the grog is a specific against scurvy; but it is surely more consonant with enlarged philosophical views, to consider as preventives, liberal supplies of wholesome food and good water, ventilation, and general and personal cleanliness; and, instead of regarding lime juice as an infallible antidote, to look for the cure of this disease to a full diet of fresh meat and vegetables.

The Report next inquires still further into the cost, as regards tenants and owners, of the public measures for drainage, cleansing, and the supplies of water, as compared with the cost of sickness; the employers' influence on the health of workpeople, by means of improved habitations; and also the employers' influence on the health of workpeople, as regards the modes of payment which do not lead to temptations to intemperance, as respects the promotion of personal cleanliness, the ventilation of the places of work, and the prevention of noxious fumes, dust, &c.; the promoting of respectability in dress; the influence of employers in the improvement of habitations and sanitary arrangements for the protection of

the laboring classes in the rural districts; and lastly, the effects of public walks and gardens upon the health and moral habits of a town population.

Upon each of these topics, much satisfactory evidence is adduced, showing the influence that may be thus exercised by the employers on the health and moral condition of the laboring population.

Under the head of promotion of personal cleanliness, the following evidence was elicited by Mr. John Kennedy, in the course of the examinations of some colliers of Lancashire:

"How often do the drawers (those employed in drawing coals) wash their bodies?—None of the drawers ever wash their bodies. I never wash my body; I let my shirt rub the dirt off; my shirt will show that. I wash my neck and ears, and face, of course.

"Do you think it usual for the young women (engaged in a colliery) to do the same as you do?—I do not think it is usual for the lasses to wash their bodies; my sisters never wash themselves, and seeing is believing; they wash their faces, necks, and ears.

"When a collier is in full dress, he has white stockings, and very tall shirt necks, very stiffly starched, and ruffles?—That is very sure, sir; but they never wash their bodies underneath; I know that; and their legs and bodies are as black as your hat."—P. 253.

On admission into the hospitals, they usually manifest extreme repugnance to being washed, one having declared that he considered it "equal to robbing him of a great coat which he had had for some years. So important a circumstance, indeed, is the process of ablution in the life of a collier, that one of them remembered that a particular event took place at Easter, "because it was then he washed his feet." Even the feet of the females, who work without their stockings, are, like those of the male workers, seen coated with the filth of years.

A subject of much interest, as one connected with the salubrity of all cities, is the effect of public walks and gardens on the health and morals of the lower classes of the population. We concur fully in the following extract from the report of the committee of physicians and surgeons of Birmingham, relative to its sanitary condition:

"The want of some place of recreation for the mechanic is an evil which presses very heavily upon these people, and to which many of their bad habits may be traced. There are no public walks in or near this town; no places where the working-people can resort for recreation, The consequence is that they frequent the ale-houses and skittle-alleys for amusement. Within the last half century the town was surrounded by land which was divided into gardens, which were rented by the mechanic at one guinea or half a guinea per annum. Here the mechanic was generally seen after his day's labor spending his evening in a healthy and simple occupation, in which he took great delight. This ground is now for the most part built over, and the mechanics of the town are gradually losing this source of useful and healthy recreation."—Pp. 275.

Section VII. reviews the recognized principles of legislation, and the state of the existing laws for the protection of the public health; and here are submitted for consideration the facts which serve to show how far the aid of the legislature and of administrative arrangements is requisite for the removal of the physical evils by which the health, and strength, and morals, of the laboring classes are depressed.

As most of these questions are local in their nature, a brief notice of

them must suffice. As regards the general state of laws for the protection of the public health, it would appear that Germany holds the first place. In the work of Professor Mohl, of Tubingen (*Polizei-Wissenschaft*), comprehending the extensive administrative duties included under the term, *police*, the author says, that "medical police is both in theory and practice essentially German. In German states only, as Austria and Prussia, has anything been done in it systematically; the literature, also, of medical police is almost entirely German. Other states either do nothing at all, as England, the United States of America, or only very imperfectly, as France; where anything is done, German principles and arrangements are closely imitated."

Mr. Chadwick here shows the existing laws for the protection of the public health in England, and also the early state of the law relative to the same subject. He enters into many details in respect to the general state of the local executive authorities charged with the erection and maintenance of town and road drainage, the sewerage for house and street drainage, and the provisions for the cleansing of the surface of streets. Under this head, we look upon the following extract as conveying sound and practical instruction.

"In the map of Leeds, where the cholera track is portrayed, it will be observed that it followed closely the fever track; and were such maps so far improved as to show at a view the condition of a district in respect to dwelling and drainage, the mark to denote sites where the drainage was imperfect would at the same time denote the seats of epidemic disease. This had been so far observed by medical men that there was, perhaps, no point on which they were more anxious and urgent than that increased sewerage and cleansing should be adopted as preventives of the cholera."—Pp. 314, 315.

The last subject considered under this section, are boards of health, or the public officers appointed for the prevention of disease; and these boards, as ordinarily constituted, are shown by Mr. C. to be inefficient. He adds—

"The statements of the condition of considerable proportions of the laboring population of the towns into which the present inquiries have been carried have been received with surprise by persons of the wealthier classes living in the immediate vicinity, to whom the facts were as strange as if they related to foreigners or the natives of an unknown country. When Dr. Arnott with myself and others were examining the abodes of the poorest classes in Glasgow and Edinburgh, we were regarded with astonishment; and it was frequently declared by the inmates, that they had never for many years witnessed the approach or the presence of persons of that condition near them. We have found that the inhabitants of the front houses in many of the main streets of those towns and of the metropolis, have never entered the adjoining courts, or seen the interior of any of the tenements, situate at the backs of their own houses, in which their own workpeople or dependents reside.

"The duty of visiting loathsome abodes, amidst close atmospheres compounded of smoke and offensive odors, and everything to revolt the senses, is a duty which can only be expected to be regularly performed under much stronger motives than can commonly be imposed on honorary officers, and cannot be depended upon even from paid officers where they are not subjected to strong checks. The examination of loathsome prisons has gained one individual a national and European celebrity. Yet we have seen that there are whole streets of houses, composing some of the wynds of Glasgow and Edinburgh, and great numbers of the courts in London, and the older towns in England, in which the condition of every inhabited room, and the physical condition of the inmates, is

even more horrible than the worst of the dungeons that Howard ever visited. In Ireland provisions for the appointment of Boards of Health have been made, but they appear to have failed entirely."—P. 342.

Mr. C. dwells upon the importance of the functions of medical officers in connection with the executive authority; and, in conclusion, he observes—

"I have submitted the chief grounds on which it appears to me that whatever additional force may be needed for the protection of the public health it would everywhere be obtained more economically with unity, and efficiency, and promptitude, by a single securely-qualified and well-appointed responsible local officer than by any new establishment applied in the creation of new local boards. Including, as sanitary measures, those for drainage and cleansing, and supplies of water as well as medical appliances, I would cite the remarks on provisions for the protection of the public health, made by Dr. Wilson at the conclusion of a report on the sanitary condition of the laboring population of Kelso. After having noted some particular improvements which had taken place, as it were, by chance, and independently of any particular aids of science directed to their furtherance, he remarks that 'it is impossible to avoid the conclusion that much more might still be accomplished, could we be induced to profit by a gradually extending knowledge, so as to found upon it a more wisely directed practice. When man shall be brought to acknowledge (as truth must finally constrain him to acknowledge) that it is by his own hand, through his neglect of a few obvious rules, that the seeds of disease are most lavishly sown within his frame, and diffused over communities; when he shall have required of medical science to occupy itself rather with the prevention of maladies than with their cure; when governments shall be induced to consider the preservation of a nation's health an object as important as the promotion of its commerce or the maintenance of its conquests, we may then hope to see the approach of those times when, after a life spent almost without sickness, we shall close the term of an unharassed existence by a peaceful euthanasia.'"—P. 356.

Section VIII. shows that common lodging-houses are the means of propagating disease and vice; for a town, notwithstanding the perfection of the police connected with drainage, &c., will be liable, if the police of the common lodging-houses is neglected, to the continued importation, if not the generation, of epidemic disease by the vagrant population who frequent them. These houses are pointed out, in the sanitary report of almost every town, as the *foci* of contagious disease within the district. Being stages for the various orders of mendicants who traverse the country in all directions, physical pestilence and moral depravation thus find an easy mode of communication. Let a few examples suffice.

The following from the medical officer of the Barnet union, shows the condition of these lodging-houses in the rural unions:

"The lodging-houses for trampers are a prolific source of disease, and productive of enormous expense to the parish in which they may be situate; from one I have within this week sent into the union work-house six cases, namely, two of fever, three of itch and destitution, and one of inflammatory dropsy. These unhappy beings are boarded and bedded in an atmosphere of gin, brimstone, onions, and disease, until their last penny be spent, and their clothes pledged to the keeper of the house, when they are kicked out and left to the mercy of the relieving officer."—P. 357.

The lodging-houses in Birmingham are thus described by a committee of physicians and surgeons:

"Lodging-houses for the lowest class of persons abound in Birmingham.

They principally exist near the centre of the town, many of them in courts; but great numbers of front houses, in some of the old streets, are entirely occupied as lodging-houses. They are generally in a very filthy condition; and, being the resort of the most abandoned characters, they are sources of extreme misery and vice. These houses may be divided into three kinds,—mendicants' lodging-houses, lodging-houses where Irish resort, and houses in which prostitutes live, or which they frequent.

"We find it stated in Mr. Burgess's return, that in 47 of these the sexes indiscriminately sleep together. In the daytime the doors of these houses are generally thronged with dirty, half-dressed women and children; and if visited in an evening, the inmates are found to be eating, drinking, and smoking. Such houses are, for the most part, occupied by beggars and trampers, but many of them are the resort of thieves. Some idea may be formed of the description of persons who frequent some of these abodes, by stating that in two of them, one of which was situate in John-street and the other in Thomas-street, a chain, fastened at one end by a staple and at the other secured by a padlock, was placed on the outside of the door, at the foot of the staircase which led to the sleeping apartments. Upon asking the mistress of the house for what purpose that was required, she stated that she employed it to lock in the lodgers until she released them in the morning, as they would otherwise decamp, and take away whatever furniture or movables they could carry with them. Some of these houses are occupied exclusively by foreigners. In a court in Park-street we visited one which was inhabited by Italians, men and women, with their stock of musical instruments, monkeys, and other small animals. We are informed that there is another Italian lodging-house in Lichfield-street, as well as one which is frequented only by the Flemish or German broom-girls."—Pp. 357, 358.

The following is the language of the medical officer of the Stockport union:

"The lodging-houses in these districts, which are principally occupied by the Irish laborers, are for the most part very much crowded, and are in a remarkably filthy state. The beds and bedding are not only loathsome to the sight but are extremely offensive to the smell, and are so closely packed that several families may occupy the same room, each bed containing several persons. In such places the married and single often repose together, and the beds are so arranged, that in some instances there is not room for a person to walk between them. I have seen seven persons in the same bed, and last week removed to the infirmary a case of rheumatic fever, with translation of the disease to the heart, from a bed which every night contains *eight* persons. I have generally found that the lower order of Irish laborers occupy the most filthy districts, and that wherever they *colonize*, misery and wretchedness is sure to abound. They are the most common applicants for medical relief at our charity."

"I lately had a case of inflammation of the absorbents of the legs, from a trifling injury to the foot, in an Irish boy, who was living in a dark, damp cellar, about four yards square, in which were two beds. The height of the ceiling was not more than six feet, and yet *seven* persons lay in it, together with a few rabbits. One of the beds had to be removed from the wall on account of its extreme dampness, and so dark was the dwelling at mid-day, that I had to make use of a candle whilst inspecting him."—P. 360.

The medical officer of the Macclesfield union, says:

"I beg to observe that the lodging-houses are a fruitful source of fever. The persons renting these tenements showed greater resistance than others in having their houses properly whitewashed at the time the epidemic cholera appeared. The vagrants who visit these houses are frequently attacked with fever: exposed during the day to the inclemency of the seasons, with their imperfect covering, ragged clothes, and naked feet; at night thrust into a room perhaps of

16 or 20 square yards, having perhaps five or six beds and three individuals in a bed, married and single, male and female, to all appearance indiscriminately lodged. When a case of illness occurs, the lodging-house keeper is most importunate and clamorous in demanding relief from the town; and when obtained, it is quite a question whether it will really be applied to the wants of the sufferer. I have never any confidence that the remedies given will be administered to the patient."—P. 361.

The lodging-houses in Newcastle are thus described by Sir John Walsham:

"There is a considerable number of lodging-houses in Newcastle, some of the rooms of which are frequently occupied by from 15 to 20 persons each. In these houses the most deplorable scenes of profligacy and depravity are met with, both sexes being crowded together in a manner injurious to both health and morals.

"A medical gentleman told me, in Stockton, this morning, that in the common lodging-houses where travelling vagrants are frequently attacked with fever, &c., and in many cases die, the beds are the very next night occupied by fresh inmates, who of course are infected with the same disorder."

"And one of the relieving officers for the same town says:

"'I have frequently had occasion to complain to the magistrates against the lodging-houses taking in so many lodgers; but the law in this respect is so defective that they could render me no assistance. On a Sunday last July, I went to see a man (a travelling musician) who was very ill of the small-pox, and died a few days afterwards. The house contained four small rooms, and was situated in a back yard, in a very narrow, confined, dirty lane. There were 40 people in the house, and they were not all in that lodged there. Four months ago I went into a room in the same yard; the room was very dirty; it was 9 feet broad by 15 feet long, and contained four beds, in which slept two men, four women, and thirteen children. I found in one of the beds two children very ill of scarlet fever; in another, a child ill of the measles; in another, a child that had died of the measles the day before; and in a fourth, a woman and her infant, born two days before; and the only space between the four beds was occupied by a tinker, hard at work."—P. 362.

Section IX. embraces a recapitulation, by Mr. Chadwick, of the chief conclusions which the preceding evidence seemed to him to warrant.

"*First, as to the extent and operation of the evils which are the subject of the inquiry:*

"That the various forms of epidemic, endemic, and other diseases caused, or aggravated, or propagated chiefly amongst the laboring classes by atmospheric impurities produced by decomposing animal and vegetable substances, by damp and filth, and close and overcrowded dwellings, prevail amongst the population in every part of the kingdom, whether dwelling in separate houses, in rural villages, in small towns, in the larger towns—as they have been found to prevail in the lowest districts of the metropolis.

"That such disease, wherever its attacks are frequent, is always found in connection with the physical circumstances above specified, and that where those circumstances are removed by drainage, proper cleansing, better ventilation, and other means of diminishing atmospheric impurity, the frequency and intensity of such disease is abated; and where the removal of the noxious agencies appears to be complete, such disease almost entirely disappears.

"That high prosperity in respect to employment and wages, and various and abundant food, have afforded to the laboring classes no exemptions from attacks of epidemic disease, which have been as frequent and as fatal in periods of commercial and manufacturing prosperity as in any others.

"That the formation of all habits of cleanliness is obstructed by defective supplies of water.

"That the annual loss of life from filth and bad ventilation is greater than the loss from death or wounds in any wars in which the country has been engaged in modern times.

"That of the 43,000 cases of widowhood, and 112,000 cases of destitute orphanage relieved from the poor's rates in England and Wales alone, it appears that the greatest proportion of deaths of the heads of families occurred from the above specified and other removable causes; that their ages were under 45 years; that is to say, 13 years below the natural probabilities of life as shown by the experience of the whole population of Sweden.

"That the public loss from the premature deaths of the heads of families is greater than can be represented by any enumeration of the pecuniary burdens consequent upon their sickness and death.

"That, measuring the loss of working ability amongst large classes by the instances of gain, even from incomplete arrangements for the removal of noxious influences from places of work or from abodes, this loss cannot be less than eight or ten years.

"That the ravages of epidemics and other diseases do not diminish but tend to increase the pressure of population.

"That in the districts where the mortality is the greatest, the births are not only sufficient to replace the numbers removed by death, but to add to the population.

"That the younger population, bred up under noxious physical agencies, is inferior in physical organization and general health to a population preserved from the presence of such agencies.

"That the population so exposed is less susceptible of moral influences, and the effects of education are more transient, than with a healthy population.

"That these adverse circumstances tend to produce an adult population short-lived, improvident, reckless, and intemperate, and with habitual avidity for sensual gratifications.

"That these habits lead to the abandonment of all the conveniences and decencies of life, and especially lead to the overcrowding of their homes, which is destructive to the morality as well as the health of large classes of both sexes.

"That defective town cleansing fosters habits of the most abject degradation and tends to the demoralisation of large numbers of human beings, who subsist by means of what they find amidst the noxious filth accumulated in neglected streets and bye-places.

"That the expenses of local public works are in general unequally and unfairly assessed, oppressively and uneconomically collected, by separate collections, wastefully expended in separate and inefficient operations by unskilled and practically irresponsible officers.

"That the existing law for the protection of the public health and the constitutional machinery for reclaiming its execution, such as the Courts Leet, have fallen into desuetude, and are in the state indicated by the prevalence of the evils they were intended to prevent.

"*Secondly. As to the means by which the present sanitary condition of the laboring classes may be improved:—*

"The primary and most important measures, and at the same time the most practicable, and within the recognized province of public administration, are drainage, the removal of all refuse of habitations, streets, and roads, and the improvement of the supplies of water.

"That the chief obstacles to the immediate removal of decomposing refuse of towns and habitations have been the expense and annoyance of the hand labor and cartage requisite for the purpose.

"That this expense may be reduced to one-twentieth or to one-thirtieth, or rendered inconsiderable, by the use of water and self-acting means of removal by improved and cheaper sewers and drains.

"That refuse when thus held in suspension in water may be most cheaply and innoxiously conveyed to any distance out of towns, and also in the best form for productive use, and that the loss and injury by the pollution of natural streams may be avoided.

"That for all these purposes, as well as for domestic use, better supplies of water are absolutely necessary.

"That for successful and economical drainage, the adoption of geological areas as the basis of operations, is requisite.

"That appropriate scientific arrangements for public drainage would afford important facilities for private land-drainage, which is important for the health as well as sustenance of the laboring classes.

"That the expense of public drainage, of supplies of water laid on in houses, and of means of improved cleansing would be a pecuniary gain, by diminishing the existing charges attendant on sickness and premature mortality.

"That for the protection of the laboring classes and of the rate-payers against inefficiency and waste in all new structural arrangements for the protection of the public health, and to insure public confidence that the expenditure will be beneficial, securities should be taken that all new local public works are devised and conducted by responsible officers qualified by the possession of the science and skill of civil engineers.

"That the oppressiveness and injustice of levies for the whole immediate outlay on such works upon persons who have only short interests in the benefits may be avoided by care in spreading the expense over periods coincident with the benefits.

"That by appropriate arrangements, 10 or 15 per cent. on the ordinary outlay for drainage might be saved, which, on an estimate of the expense of the necessary structural alterations of one-third only of the existing tenements, would be a saving of one million and a half sterling, besides the reduction of the future expenses of management.

"That for the prevention of the diseases occasioned by defective ventilation, and other causes of impurity in places of work and other places where large numbers are assembled, and for the general promotion of the means necessary to prevent disease, it would be good economy to appoint a district medical officer independent of private practice, and with the securities of special qualifications and responsibilities to initiate sanitary measures and reclaim the execution of the law.

"That by the combinations of all these arrangements, it is probable that the full insurable period of life indicated by the Swedish tables; that is, an increase of 13 years at least, may be extended to the whole of the laboring classes.

"That the attainment of these and the other collateral advantages of reducing existing charges and expenditure are within the power of the legislature, and are dependent mainly on the securities taken for the application of practical science, skill, and economy in the direction of local public works.

"And that the removal of noxious physical circumstances, and the promotion of civic, household, and personal cleanliness, are necessary to the improvement of the moral condition of the population; for that sound morality and refinement in manners and health are not long found co-existent with filthy habits amongst any class of the community.

"I beg leave further to suggest, that the principles of amendment deduced from the inquiry will be found as applicable to Scotland as to England; and if so, it may be submitted for attention whether it might not be represented that the structural arrangements for drainage would be most conveniently carried out in the same form as in England, that is, by commissions, of the nature of commissions of sewers, adapted, as regards jurisdiction, to natural or geological areas, and including in them the chief elected officers of municipalities, and other authorities now charged with the care of the streets and roads, or connected with local public works.

"The advantages of uniformity in legislation and in the executive machinery, and of doing the same things in the same way (choosing the best), and calling the same officers, proceedings, and things, by the same names, will only be ap-

preciated by those who have observed the extensive loss occasioned by the legislation for towns which makes them independent of beneficent, as of what perhaps might have been deemed formerly, aggressive legislation. There are various sanitary regulations, and especially those for cleansing, directed to be observed in 'every town except Berwick and Carlisle;' a course of legislation which, had it been efficient for England, would have left Berwick and Carlisle distinguished by the oppression of common evils intended to be remedied. It was the subject of public complaint at Glasgow and in other parts of Scotland, that independence and separation in the form of general legislation, separated the people from their share of the greatest amount of legislative attention, or excluded them from common interest and from the common advantages of protective measures. It was, for example, the subject of particular complaint, that whilst the laboring population of England and Ireland had received the advantages of public legislative provision for a general vaccination, the laboring classes in Scotland were still left exposed to the ravages of the small-pox. It was also complained by Dr. Cowan and other members of the medical profession, that Scotland had not been included in the provisions for the registration of the causes of death which they considered might, with improvements, be made highly conducive to the advancement of medical science and the means of protecting the public health."—Pp. 369—72.

Here follows an Appendix of eighty-five pages, consisting of a variety of documents illustrating the several subjects investigated in the preceding pages. From these, we shall make several extracts in further elucidation of our disgusting theme. See the following description of the habitations and lodgings of the lower orders of Paris:

"Of all the lower orders, the chiffonniers inhabit the most infected and disgusting lodgings. It is vain to expect to descend into the lowest ranks of society,—inequality always appears somewhere. Even the chiffonniers have their notables. There are some a little more economical, a little more raised than the mass, and who enjoy a certain comfort. Those, the most elevated, occupy one or two small rooms, which they hire for themselves and their families; others possess a pallet, which serves them to sleep on, in the chamber of which they are one occupant among many. But this possession is more often collective than personal; and although shared, it does not fail to excite the envy of the poor wretches who lie in a species of trough, on rags, or on handsfull of straw, with which the room is strewed. The police charged with the surveillance of the lodgings inhabited by the chiffonniers give an incredible picture of them. Each occupant keeps by him his basket, sometimes full of filth—and what filth! These savages do not hesitate to comprise dead animals in their gleanings, and pass the night by the side of this stinking prey. When the police go to these places, they experience a suffocating feeling, bordering on asphyxy. They order the windows to be opened when they can be opened, and the severe representations they address to the lodging-house keepers on this horrible mixture of human beings with decayed animal matter, do not move them. They answer, that their lodgers are accustomed to it as well as themselves. A trait of manners peculiar to the chiffonniers, and which might be called their pastime, consists in rat-catching in the courts of the houses which they frequent. They entice the rats by the aid of certain substances attached to the rags they gather in the streets. With this view they put heaps of rags near the holes in the walls, and when they think the rats are buried in the rags, they let loose into the court dogs trained for the purpose, and in the twinkling of an eye, they make themselves masters of the rats, of which they eat the flesh and sell the skin.

The lodgings which receive at night the scum of society are thorough pest-houses. Those even which are not frequented by chiffonniers become, by the crowding of the inhabitants and their filthy habits, dangerous centres of infection. There are some chambers which contain as many as nine beds, separated by small passages hardly wide enough to get through, and these beds are

often occupied by two persons who do not know each other, and have never seen one another. Difference of sex is no obstacle to these nocturnal and fortuitous cohabitations, although the police neglect nothing to prevent disorders. Among the female apartments there is one which is famous for the picture of decrepitude and abjectness which it presents. The women who occupy it are old drunkards, of whom several are suspected of theft. The spectacle of these animated mummies has something sepulchral.

"One must bring to social anatomy a serious spirit of investigation, to form a just idea of the population which lives in the concealed recesses of society. The imagination, however fertile and daring, could never reach, in this matter, to the height of the reality: there is a character, a physiognomy, a strangeness, which it is necessary to have seen in order to assume the responsibility of an historian. Let no one tax with romance the traits of manners nor the description of places contained in this chapter. However softened by the reserve I have imposed on myself, they are not less true at bottom. I have sacrificed the coarseness of the outline and coloring out of respect to decency. It is the only infidelity of which I accuse myself. It is impossible not to feel the necessity to provide an efficacious remedy for a state of things so contrary to the rights of humanity and civilisation."*

Well may it be said that truth is stranger than fiction—a remark excited by the circumstance that here we are presented with a *reality*, which, compared with the *romance* of the "*Mysteries of Paris*," which, it is to be presumed, has been universally read, far exceeds it in wonderfulness! We cannot refrain from giving another extract bearing upon the same point, which, by the way, illustrates literally the trite saying, that *misery makes one acquainted with strange bed-fellows.*

"There exist in Paris some thousands of individuals who have no domicile—who sleep to-day in one place, the next day in another—and who have recourse every evening to those houses where, for a payment usually very moderate, they can at least obtain a place to lie in, and a covering for their heads. It is not only strangers living temporarily in Paris who lodge in this manner; a mass of workmen, mostly single men, who have not stirred from the capital for ten, fifteen, and twenty years, prefer this kind of life to the occupation of a separate chamber. It may be affirmed, without fear of contradiction, that this population comprises all that is most drunken and debased in society. It is composed of people without foresight, and without a home, living from day to day, and trusting to the hospitals in the case of sickness or infirmity. It is in the lowest places in these disgusting haunts in which a person is lodged for six, four, and even two sous, that the greater part of the prostitutes reside, who can scarcely, after purchasing food, lay aside from their daily gains the trifling sum necessary to avert sleeping in the open air. I have visited some of these lodgings, and it was not without a feeling of pain that I have seen human creatures reduced to live in such places, and that in the capital of France. To give a just idea of these abodes, I will extract some passages from the remarkable report which the inspector-general of furnished lodgings addressed to the prefect of police at the time of the cholera. It tells of nothing but houses in ruin, of straw for beds in a state of putrefaction, of darkness, of infectious smells, of filth without example. These are some of the passages:—

"'Rue ——, No. —. This house is remarkable for its excessive dirt. It is a genuine centre of infection. It is inhabited solely by thieves, smugglers, beggars, and prostitutes. It is impossible to enter without being suffocated.

"'Rue ——, No. —. This house fixes the attention by its construction and filth. There are no beds, except some loathsome pallets; animal remains, intestines, and the refuse of meals, are rotting in the court; all the chambers

* Classes Dangereuses, tom. ii., p. 126.

look on a corridor completely deprived of air and light; the sinks and the privies of every story are loathsome from ordure and fecal matter. It is the hideous abode of vice and misery.

"'Rue ——, No.—. The court of this house is four feet square, and is full of dung; the chambers, crowded with occupants, open on it; the privies, dilapidated to the fifth floor, let the fecal matter fall upon the staircase, which is covered with it to the bottom. Many of the rooms have no other aperture than the door which opens upon this staircase. The house is the resort of sharpers, of thieves, of the most filthy prostitutes, and of everything that is most abject of both men and women.

"'Rue du Faubourg ——, No. —. A house occupied from top to bottom by chiffonniers, mendicants, street-organists, street-walkers, and Italian boys, who go about with animals. All these sleep upon rags picked from the street, and of which there is a depôt on the ground-floor. More complete abjectness it is impossible to witness.

"'Rue ——, No. —. This house is the resort of all that is most abased. It is exclusively inhabited by thieves, prostitutes, discharged criminals, beggars, vagabonds, gamesters, and every species of rogues. The greatest filth reigns everywhere; the windows are made of oiled paper instead of glass; the rooms are infected; at each story the ordure of the privies flows upon the staircase.'"*

Another French writer, M. Frégier, has given the following description of the external appearance of these abodes:—"'The streets, not, at furthest, more than eight feet wide, are dirty, and flanked by lofty houses, four stories high, which are blackened by time. The height of the houses renders the streets gloomy and damp, and the houses themselves are dark, particularly on the ground-floor. Spirit shops, beer shops, and low eating-houses abound. The gloom of these shops, joined to the repulsive physiognomy of the streets, infuse a secret horror into the visiter who is led there by the spirit of observation, and who knows that the greater part of the shops are the habitual resort of the lowest prostitutes, and of rogues that live in the neighborhood. The lodgings and places of dissipation frequented by this part of the population are worthy, from their filth, of the streets and quarters in which they are situated.'"†—Pp. 427,–429.

Another paper of this Appendix refers to the sanitary condition of workers in cotton-mills in Lower Austria. The following passage is quoted from a report which the Commission de l'Intendance Sanitaire du Nord drew up in the year 1832:

"No one without personal inspection can form any conception of the dwellings of our work-people: the neglect in which they live brings evils with it which make their misery unbearable, indeed almost fatal. Their poverty by the negligence and demoralization which produce it, becomes almost destructive. In their dark cellars, in their cellar-like rooms, the air is never changed; it is perfectly poisonous. The walls are covered with filth. If a bed is ever found, it is always filthy, and made up of foul and rotten straw. It is covered with a coarse and dirty rag, the color or material of which can hardly be distinguished; it is a miserable threadbare coverlet. The dirty and worm-eaten pieces of furniture and utensils are thrown about without any order; the closed windows scarcely allow any light to pass through their smoky panes, many of which are stuffed with paper, and (it will hardly be credited) they not unfrequently nail the window fast in order that it may run no risk of being broken in the opening and shutting of it. The floors of their houses are dirtier than the rest of the house, covered with ordure, ashes, rotten straw, and all that has been brought in from

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* Parent Du Châtelet, de la Prostitution, tom. i., p. 504.
† Classes Dangereuses, tom. i., p. 135.

the filthy streets outside; it is a receptacle for every kind of vermin. The air is no longer fit to breathe; one feels in these abodes stunned with an overpowering and horrible stench, a smell of excrement, filth of every kind, and of human beings. And the inhabitant of these abodes, in what state is he? His clothes are in rags, and tossed on. His hair has never known a comb, and is covered with the material with which he is working; and his skin, though filthy, is yet distinguishable on his face, but on the other part of his body, concealed by his rags, there are accumulations of every kind. Nothing is so fearfully dirty as the old and wrinkled of these demoralized creatures. Their abdomens distended, their limbs distorted, their backs bent forward, their legs twisted, their necks scarred and full of swellings, their fingers festered, their joints swollen and weak; and, lastly, these unfortunate creatures are tormented, we may say eaten up, with vermin of all kinds."—P. 433.

We have thus taken *un coup d'œil*, morally, socially, and politically, at the present condition of the "fast-anchored isle," which, boasting a sceptre both by sea and by land, has extended its vast dominions to the outer bounds of the earth—a domain upon which the sun never sets. We have beheld the depressed condition, sunk in poverty, disease, and vice, of the laboring population, the white slaves of this kingdom, which constitute the great masses, compared with the few provided for by their constitution, and the few merchants, tradesmen, and professional men, who have provided for themselves. We thus behold a nation which has attained the summit of human glory; but it is glory decorated in rags—a towering and gorgeous monument which rests upon the necks of the needy multitude, whose constant struggle is for bread!

ART. X.—*A Practical Treatise on the Diseases of Children.* By D. FRANCIS CONDIE, M.D., etc. Philadelphia: Lea & Blanchard. 1844. 8vo. pp. 652.

THE considerations which induced Dr. Condie to add another to the very considerable number of works recently published on the diseases of infants, are set forth in his preface. After stating that great attention has recently been given to the pathology and physiology of childhood, he proceeds thus:

"Several very valuable publications on the diseases of children, have, it is true, made their appearance within a few years past, comprising many of the more recent observations. They are, nevertheless, all of them, deficient in many important particulars—especially, in reference to those forms of infantile disease more commonly met with in the United Sates—while few, if any of them, do full justice to the practical facts that have been contributed by American physicians. There is, consequently, still ample room left,—if there be not an absolute demand,—for a new and more comprehensive treatise."

Few persons, after reading this extract, would suppose that of these "valuable publications" one was by an American physician (Dr. James Stewart, of New York), in which especial attention was given to "those forms of infantile disease most commonly met with in the United States,"

and very full "justice done to the practical facts that have been contributed by American physicians;" in short, few would imagine that such a book, as "Stewart on the Diseases of Children," existed. On the contrary, we put it to every intelligent and candid man to say, whether the impression that no such work existed is not as distinctly and forcibly conveyed in the above extract, by implication, as if Dr. Condie had made a direct assertion to that effect?

How is this most extraordinary passage to be explained? Are we to suppose that Dr. Condie, envious of the success of Dr. Stewart, was unwilling even to name him or his book? Can it have "entered into the heart of man to conceive" that a work, of which a second edition has already been demanded, could be kept from the public notice, hidden from the public eye, by such a neglect of ordinary courtesy?

Neither of these suppositions would we willingly adopt. Was Dr. Condie, then, ignorant of the existence of any such book? Have his time and attention been so engrossed by his learned labors, and "that somewhat extensive practice," to which he alludes with so much complacency, that he never heard of this book? To this conclusion we are absolutely driven. We embrace it, and commend it to the charity of our readers. The "charity which believeth all things," may believe that Dr. Condie's course in this matter is to be attributed not to an unwillingness to notice, lest he might be, for very shame, compelled to do justice to a highly meritorious cotemporary publication, nor to a desire to keep out of sight a work with which he was afraid to have his own compared. To neither of these causes is it owing that Dr. Condie all but asserts, that there is no recent American work on the diseases of infants. This all-but-assertion is to be attributed not to Dr. Condie's malice, but to his ignorance. He knew no better.

Having, however, for Dr. Condie's special benefit, stretched our charity thus far, we are compelled, by our sense of justice, to say a word or two, not by way of threat, but only of friendly warning. There exists, in certain quarters, a great disposition "to do justice to American physicians," provided always that they are not New York physicians. If, however, they are so unfortunate as to hail from the commercial metropolis, small benefit have they of this vaunted desire to do justice. This disposition, which has existed for some time, has not unfrequently "borne fruit in deeds." In former days this was, if not generous, at least safe—*but it is safe no longer.*

In the position which New York now occupies in relation both to medical learning and medical teaching, this "*small game*" must be played no longer. There will be nothing won at it. But let us return to Dr. Condie. An analytical review of a work like this cannot be expected. All that we or our readers have time for, is a general notice of the manner in which the book is written, with remarks on any peculiar opinions or modes of practice.

As to the getting up of the book, it is not much to our taste. The tone of arrogance which pervades the preface, is carried through the body of the work; and there is a disposition, by the frequent introduction of the names of authors, without any distinct reference to their works, to make small learning pass for great things, which is not admired by those who see through it. Again: the accumulation of prescriptions may impress students with the idea that this is, *par excellence*, "a practical treatise." But when they come to find that the same prescription

is given at large over and over again, they must be tyros, indeed, if they do not appreciate the "purely practical character" of the work.

As to the style of the book, we will not be over critical. It is, to be sure, a luxury of no ordinary relish to read a medical book written by a scholar; but, then, it is not to be denied that many medical men are ignorant, and rather careless as to the rules of composition; and, as we said before, we will not be hyper-critical, but rather pass to the notice of the modes of practice commended by the author.

We shall give our readers clear notions of this part of the subject, by saying, once for all, that Dr. Condie is a great giver of physic, and that he gives it in very large doses; *e. g.*, at page 130, we are recommended to give quinine to an infant at the rate of four grs. a day. But, then, mammoth doses of quinine are now all the rage, especially among the army doctors in Florida. On page 165, calomel, grs. iv., every three hours, (grs. xlviii. being prescribed,) are ordered. On page 168, pulv. gallæ, grs. v., every three hours; on page 216, acet. plumbi, gr. i., three times a day, or *oftener;* and, finally, page 362, extr. hyosciami, grs. ii., is commended as a "*gentle narcotic*" for an infant of two or three months! In the second place, Dr. C. is what is called, in popular phrase, *a great calomel doctor*. Calomel, with him, is everything, and everything is calomel. For stomatitis, calomel, magnesia, and ipecac (p. 130); for difficult dentition, calomel, magnesia, and ipecac (p. 153); for tonsolitis, calomel, and ipecac (p. 156); for diphtherite, calomel, magnesia, and ipecac (p. 165); for chronic gastritis, calomel, magnesia, and ipecac (p. 189); and finally, as we are weary of this everlasting reiteration, for "mild mucous and serous diarrhœa," one or two grs. of calomel every two hours!

Now, we had a right to expect that a gentleman who values himself so much upon being up to the times in medical practice, should have known that the day for this *calomel-doctoring* has gone by. The pathology of mucous membranes is too well understood for us to admit of this wholesale calomelizing.

Another manifestation of the disposition to over-doctering which pervades this unhappy book, is the constant commendation of blisters. At page 215, for example, we find this most miserable piece of advice. "*In all cases* of chronic diarrhœa, the derivative effects of blisters to the abdomen are advantageous, and often very decidedly so; and, in many cases, the blisters may be repeated as soon as the first heals." What would be thought of the practitioner who blistered the abdomen "*in all cases* of chronic diarrhœa in infants?"

We have now given our readers an idea of some of Dr. Condie's peculiarities as a practitioner; and, having done so, we close this notice. We shall pronounce no opinion upon the general merits or absolute value of his book, having given our readers an opportunity of forming such opinion for themselves.

It is with pain that we have referred to the Chinese notions of "outside barbarians," entertained by too many of the medical men of the self-styled "medical metropolis of the western continent." E. M.

Art. XI.—*Annual Report of Surgeon-General* Lawson *to the Secretary of War, for the fiscal year ending on the 30th September*, 1843.

Passing over the "statement of the fiscal transactions," we shall give so much of this succinct, but comprehensive, Report, as pertains to the operations of the medical department of the army.

"The number of cases of indisposition which have been under treatment in the army, during the last twelve months (see report, marked A),* was 27,734; 26,820 of which occurred within the past year; 914 being cases that remained of the preceding year.

"Of the whole number of sick, 26,513 have been restored to duty, 309 have been discharged the service, 18 have deserted, and 160 have died; leaving on the 30th September, 726 still on the sick report.

"The mean strength of the army for the last twelve months has been about 9,863: and as the number of sick, during the same period, was 27,734, and the aggregate of deaths was 160, it will appear that the proportion of cases of indisposition to the number of men in service, was as 281-100 to 1, or 281 per cent; the ratio of deaths to the number of men, as 1 to 61¼, or a fraction less than 1¼ per cent; and the proportion of deaths to the number of cases treated, as 1 to 173 7-100, or 57-100 per cent.

"A medical board for the examination of assistant surgeons for promotion, and of applicants for appointment to the medical staff of the army, was convened in the city of New York on the 1st of July last.

"Before this board one assistant surgeon presented himself for examination; and, having been found qualified, he was recommended for promotion.

"From among the applicants for appointment, twenty-four were invited to the examination, fourteen of whom only reported to the board; ten having declined, or failed to present themselves for examination.

"Of those who reported to the board, three afterwards withdrew without an examination; one was objected to, on account of physical disqualifications; and ten were examined; and of these last, four were approved and recommended for appointment.

"In conformity with the will of Congress, expressed and implied, an additional number of barometers has been purchased and placed at the prominent positions in our country; and the medical officers have been required to give all the attention to meteorology practicable, compatible with their duty to the sick, and other higher obligations to the Government; so that, in addition to the thermometrical and other meteorological observations which have been heretofore received from the different military posts, we shall be able to report barometrical observations also, from most of the important stations in the United States.

"From the report and accompanying charts of Mr. Espy, the meteorologist, herewith presented, it will be seen that he has been zealously engaged in prosecuting his investigations into the various phenomena accompanying storms, with the view of demonstrating the laws by which the whole are governed.

"From data derived from observations taken in every section of the United States, Mr. Espy has, with very great labor, framed these maps, exhibiting to the eye, as he says, 'the progress of storms through the United States, from west to east, accompanied always with a depression of the barometer, and strong winds on each side blowing towards the line of least pressure,' &c.

"Charts like these he contemplates preparing quarterly throughout the year, should Congress deem it expedient to sanction the proceeding; and as the work assigned him will not be complete, nor the result of his observations and investigations so clearly and satisfactorily illustrated, without these exhibits of barometrical curves, &c., I respectfully recommend the project to the favorable consideration of those whose province it is to foster the undertaking.

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* This table is here left out.—Editor.

'I deem it to be my duty to call the attention of the Department of War and of Congress to the fact, that, at many of the forts on the seaboard, no proper buildings have been erected for the accommodation of the sick of the garrison.

"As a general rule, in the absence of all accommodations outside of the walls, some of the casemates of the fort are allotted to the purposes of a hospital; where, in addition to the want of privacy, and deficiency of ventilation and of light, the sick are constantly annoyed by the tramping of the other men, and the clangor of their arms within the area of the fort, and frequently shocked by the thunder of the cannon, and the rattling of the battlements over their heads.

"In further illustration of my views on this subject, I beg leave to give here a transcript of my report, made on a late occasion, touching the propriety and the necessity of having distinct buildings for hospitals erected near our permanent fortifications.

"'Whether the Engineer Department estimates for funds with which to construct buildings for hospitals, or Congress, in their appropriations for fortifications, contemplate the erection of suitable permanent hospital establishments, I know not; but, whatever may have been the practice, or the opinions heretofore prevailing on this subject, it is a matter, in my humble judgment, deserving of the serious consideration of the Department of War.

"'I hold that an appropriation of money for the building of fixed fortifications, or a permanent military work, provides not only for the construction of the walls of the fort and the batteries, but also for the erection of barracks, hospitals, and other indispensable accommodations for the men, sick and well, who are to occupy the post and serve the batteries.

"'A military work without barracks, hospital, store-houses, &c., is incomplete; a fortification without these essential appurtenances, is a mere battery—a work of inferior character, it seems to me, to those contemplated generally in the appropriation acts of Congress.

"'As the officers of engineers are the persons who plan and superintend the construction of our permanent fortifications, they understand best the several points of offence and defence, and can better adapt the accommodations for the men to the size and figure of the work, than any other agents of the government. And as under a general contract for erecting a fortress, embracing barracks, hospitals, and other appurtenances, as well as the fortifications proper, better terms can be obtained than by a special agreement *afterwards* for the construction of the necessary accommodations for the officers and men, there cannot be a doubt as to the propriety of having the whole work done according to one original design, and under the control of one and the same department.

"'The present seems to be an opportune time for me to give an expression of opinion, also, touching another matter involving the health and efficiency of the men who are to garrison our fortifications.

"'It is a question, and one which has never been satisfactorily decided, whether the casemates of a fort can be with propriety assigned exclusively as the quarters, &c., for the officers and men who are to occupy the work in time of peace. As a professional man, I have no hesitation in saying that, *in general*, casemated rooms cannot be occupied as quarters, with the same prospect of health and comfort that distinct buildings within the area of the fort, or outside the work, can afford.

"'Were it possible to construct casemates so that they could be kept dry, and preserved also in a uniform temperature, military propriety, as well as economy, would seem to require that so much space within a garrison should not remain unappropriated. But as our experience proves that casemated rooms are invariably damp, and with a temperature of air very different, in summer and in winter, from the external atmosphere, it must be conceded that they are not, on the score of humanity, or of economy even (having reference to the sickness and permanent invaliding of the men), suitable quarters for troops.

"'Casemates, like the batteries of a fort, are intended for the purposes of war; they will give shelter and protection to the temporarily increased force of garrison during the presence of an enemy, and men under those circumstances will readily submit to the necessities of the case. Until this time of need, how-

ever, I think it will be good policy to let the casemates remain bare walls, for the protection from the weather of spare cannon and other implements of war, reserving the money that would otherwise be expended in fitting up these places as quarters, for the erection of distinct buildings for the accommodation of the officers and men who are to garrison the fort.'

"The objection to having barracks, hospitals, &c., erected outside the walls of our forts is, as I understand, that they destroy the military appearance of the place, and, by masking the rear battery, interfere with the fire from the guns on the line of defence.

"This may be a valid objection with the scientific engineer, whose laudable pride it must be to display the fortress which he has erected in all its strength and grandeur of appearance. I, however, whose province it is to suggest measures conservative of health in the army, and whose duty it is, too, to advocate the cause of the sick and invalided soldier, cannot be brought to subscribe to the wisdom of a policy, which would withhold from the officers and men who are to occupy these forts the ordinary comforts, and abridge them of the accommodations essential to their health, under the supposition that some time or other (perhaps in the hundredth year) the work may be attacked, and the use of all the guns required, unincumbered with a hospital or other buildings outside of the fortification. Barracks, hospitals, &c., distinct from the walls of the fort (and which can be built at as little expense, I apprehend, as fitting up casemates for quarters), will give accommodation and comfort to the garrison for forty or fifty years; and should eventually, one or more of our many works of defence be besieged or stormed by an enemy, why, the buildings that mask the guns, or cover the assailants, may be readily burnt down, or battered down by our own cannon."

ART. XII.—*An Elementary Treatise on Human Physiology, on the basis of the Précis Elémentaire de Physiologie. Par F. Magendie, Membre de l'Institute de France, etc. etc. Fifth edition.* 1838. *Translated, enlarged, and illustrated with diagrams and cuts. Especially designed for the use of students of medicine.* By JOHN REVERE, M. D., Professor of Medicine in the University of the city of New York. New York: Harper & Brothers. 1844. 8vo. pp. 539.

UNLIKE the majority of modern systems of physiology, which are a mere compilation of the experiments and doctrines of others, all the important questions discussed in the volume before us, have been thoroughly examined and experimented upon by the distinguished author. Than M. Magendie, there is no physiologist, since the death of Sir Charles Bell, that holds, as an original observer and inquirer, an equal rank; and as he has been unsurpassed in opportunities of observation and in the facility of experimenting on living animals, so have his individual efforts contributed much to the present high state of the science.

As early as the year 1822, Professor Revere published a translation of Magendie's "Summary of Physiology," which was very favorably received by the profession. Since then, the original work has gone through several large editions; and as the science of physiology has, in the interim, undergone a complete revolution in many points, in the accomplishment of which a very conspicuous part was acted by our author, the work before us, entitled the "*Précis Elémentaire de Physiologie*," brings down the science to the present day. To this Dr. Revere, the translator and editor, has made numerous additions on subjects which he supposed had not been treated sufficiently in detail by the author himself.

Besides, he has added a large number of diagrams and pictorial illustrations of the different organs and structures. "In a word," he says, "it has been his aim to present a system of human physiology which shall exhibit in a clear and intelligible manner the actual state of the science, and adapted to the use of students of medicine in the United States."

In the accomplishment of this object, Dr. Revere has spared no labor. Indeed, he has augmented the work by one-fourth, if not as much as one-third, by the introduction of many highly important subjects. For example, he gives an entirely new chapter on the characteristics of man. Again, he furnishes a highly interesting account of the very marked physiological and psychological phenomena, afforded by the case of Laura Bridgman, as reported by Dr. Howe; and which we should here present to our readers, were it not that Dickens' "*Notes*" have already made the subject familiar to every man, woman, and child, throughout the land. In fine, the American Editor has fully accomplished what he has proposed to himself in undertaking this work, which is, to make a volume adapted to the use of medical students in the United States.

As our medical press, at this time, teems with productions in every department of medicine, such a notice of each work as our inclination would prompt, is entirely precluded from our pages. As regards *elementary* works, a brief and comprehensive notice is of course all that our readers will expect; while we shall always endeavor to secure for each Number of the Journal, an analytical review of one or two new volumes, having original characteristics, as for instance, those of the Report on the sanitary condition of the laboring population of England, found in this Number.

ART. XIII.—*A Practical Treatise on Midwifery.* By CHAILLY, Doctor of Medicine and Ex-chief of the Obstetric Clinique of the Faculty of Paris, Professor of Midwifery, Member of the Society of Medical Emulation, etc. Accompanied with 216 wood-cuts. A work adopted by the Royal Council of Public Instruction. Translated from the French, and edited by GUNNING S. BEDFORD, M. D., Professor of Midwifery and the Diseases of Women and Children in the University of New York. New York: Harper & Brothers. 1844. 8vo. pp. 552.

SPEAKING of Midwifery, we are involuntarily led to congratulate the Professor of this branch of medicine upon so propitious a delivery—a bantling which is neither still-born, nor is it, in the language of Malthus, "*born into a world already possessed.*" Having now a market at home in the students that crowd our lecture-rooms and the cliniques of our hospitals, we find, in the two new text-books noticed in this Number, an earnest of the future, and an evidence that this supply is merely in response to the crying demand.

We have in this volume an exact reproduction of the opinions of the well-known and highly appreciated P. Dubois, whose pupil M. Chailly was for many years. He was thus trained to practical knowledge not only by an excellent master, but by his own personal experience acquired through an attendance of years at the Maternité and the Clinique d'Accouchemens of Paris; nor has he neglected to avail himself, in

order to render his treatise what it ought to be, of the labors contained in the excellent publications of Madame Lachapelle, of Desormeaux, of MM. Nægele, Velpeau, Stoltz, Moreau, etc. The book is essentially practical, M. Chailly having purposely abstained from the discussion of points merely speculative or scientific.

Although we can say conscientiously that this work will bear comparison with any other as a practical guide, yet we cannot coincide with all M. Chailly's opinions. As regards the Cæsarean section, for example, we differ from him *toto cælo*. "We have not," says M. Chailly, "had within the walls of Paris, a single example of a woman who has survived the Cæsarean operation." In one instance, a woman operated upon by M. Dubois, lived seventeen days (being the longest period), when she died of tetanus, notwithstanding the promise of the most favorable issue. Upon this point, the American editor has the following judicious remarks:

"The Cæsarean section is, undoubtedly, a dread alternative for the accoucheur to choose, but I cannot agree with Dr. Chailly, that its fatality is as great as he represents; nor am I disposed to adopt the opinion, unfortunately too general, that craniotomy is almost always to be preferred to the Cæsarean section. In truth, it needs some nerve, for a man of high moral feeling, and much evidence as to the necessity of the operation, before he can bring himself to the perpetration of an act which requires, for his own peace of mind, the fullest justification. The man who would wantonly thrust an instrument of death into the brain of a living fœtus, would not scruple, under the mantle of night, to use the stiletto of the assassin. Yet, how often has the fœtus been recklessly torn from its mother's womb piece-meal, and its fragments held up to the contemplation of the astonished and ignorant spectators as testimony undoubted of the operator's skill! Oh! could the grave speak, how eloquent, how momentous, how damning to the character of those who speculate in human life would be its revelations!

"Independently of the abuse of this operation (craniotomy), of its unjustifiable frequency, let us for a moment look at its relative fatality, when compared with the Cæsarean section.

"According to the statistics gathered by Dr. Churchill, among British practitioners, craniotomy is resorted to 1 in 219 cases; among the French, 1 in 1205 cases; among the Germans, 1 in 1944½: the average, therefore, of these three nations will be 1 in 896¼. In 252 cases, 52 mothers died, or about 1 in every 5. As regards the Cæsarean section, the same author states, that since 1750 he has collected 321 operations, from which 149 mothers recovered; and that in 187 cases, where the result is mentioned, 130 children were saved, and 57 lost.

"Hence, then, we have a calculation showing that in craniotomy, where, of necessity, all the children must be sacrificed, one woman out of every five died; while in the Cæsarean section, one mother recovered out of two and a fraction, and the success to the child was certainly most fortunate.

"But, again, we only hear of the *deaths* in the proportion of 1 to 5 of women who have been subjected to the hazards of craniotomy; nothing is said of the dreadful lacerations and destruction of the soft parts, which often entail on the sufferer distress and anguish to which death itself would be preferable. I do not believe it is possible to remove a child by embryotomy when the antero-posterior diameter of the superior strait measures less than two inches, without subjecting the mother to severe hazard, provided the child be of the ordinary size. My opinion on this subject is not a speculative one; it is based on repeated experiments made on a wooden pelvis constructed for this purpose; and I am satisfied that, even with the space of two and one-fourth inches, all the dexterity which the operator can bring to his aid will be required to protect the mother from serious, if not fatal, injury. Authors, therefore, I think, must have labored under some error on this subject. For example, Dr. Davis states that craniotomy is admissible when the diameter is only one inch; Dr. Burns, when it is one and three-fourths; and Dr. Osborne, when it is one and a half inches. I can

not but protest against any such deductions, and, therefore, without hesitation, would prefer the Cæsarean section (if I had certain evidence that the child lived) to any attempt to extract it *per vias naturales*, if the antero-posterior diameter measured less than two and one-eighth inches. The object of craniotomy is to save the life of the mother by sacrificing that of the child. This object cannot, in my judgment, be attained without occasioning the most serious results (even admitting she survive the operation) in a contracted pelvis such as is described by Drs. Burns, Osborne, &c."

To view this important question in its proper light, we ought to estimate as nearly as practicable the relative chances of life on the part of the mother. As the child is the certain sacrifice in craniotomy, it ought to be performed only when the antero-posterior diameter of the superior strait is of sufficient width not to endanger the life of the mother. If it does not exceed two inches, the Cæsarean section is preferable, inasmuch as this operation gives a chance of life both to the mother and the child. At all events, the experience of France is, by no means, decisive of the question. As our space, at this time, will not allow a fuller analysis of this excellent treatise, we must content ourselves with one or two further extracts. The following note by the editor, of a highly interesting case, which appears under the head of Molar Pregnancy, is worthy of being here presented:

"In 1839 I received a note, requesting me to visit, without delay, a lady who was residing in the State of New Jersey, about thirty miles from this city. I immediately repaired to her residence, and on my arrival was received by her father, a venerable and accomplished gentleman. He seemed broken in spirit, and it was evident that grief had taken a deep hold of his frame. On being introduced into his daughter's room, my sympathies were at once awakened on beholding the wreck of beauty which was presented to my view. She was evidently laboring under phthisis, and it appeared from her wasted form that her days were numbered. My presence did not seem to produce the slightest disturbance, and she greeted me with this expression, "Well, doctor, I am glad to see you on my beloved father's account, for he will not believe that I cannot yet be restored to health. Life has lost all its charms for me, and I long for the repose of the grave." These words were spoken with extraordinary gentleness, but yet with a firmness that gave me an insight into the character of this lovely woman. From her own lips I received the following history of her case. Her father was a clergyman of high standing in the English Church, and had a pastoral charge in England, in which he continued until circumstances rendered it necessary for him to leave that country and seek a residence in America. At a very early age she had lost her mother, and was almost entirely educated by her father, whose talents and attainments admirably fitted him for this duty. When she had attained her eighteenth year, there was an attachment formed between her and a young barrister of great promise and respectability. This attachment resulted in a matrimonial engagement. Soon after the engagement, she began unaccountably to decline in health. There was considerable irregularity in her menstrual periods, with more or less constant nausea, loss of appetite, inability to sleep, feverishness, and an uncontrollable dislike to society; besides, there was a general change in her personal appearance: her abdomen became enlarged, her breasts increased in size, &c. These changes soon attracted the attention of some of her female acquaintances, and rumor was uncharitable enough to suspect her virtue. The barrister to whom she was affianced heard of these reports, and, without a moment's delay, wrote a letter to her father, begging to be exonerated from his engagement. This was assented to without hesitation. The young lady, conscious of her own innocence, requested that a physician should be sent for, in order that the nature of her case might be ascertained. A medical man accordingly visited her, and, after an investigation of her symptoms, he, no doubt from very philanthropic motives, informed the father that she was pregnant, and that means should be immediately taken to keep the

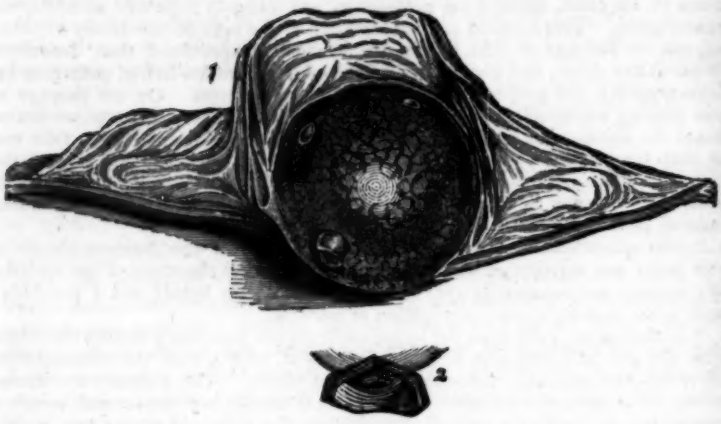
unpleasant matter secret. The father, indignant at this imputation against the honor of his child, spurned the proposition, and instantly requested an additional consultation. This resulted in a confirmation of the opinion previously expressed, and the feelings of that father can be better appreciated than described. Without any delay, that good man determined to resign his living, gather up his little property, and proceed with his daughter to America. On his passage to this country his daughter became extremely ill, and as there was a physician on board the steamer, his advice was requested. After seeing the patient (she was at that time laboring under excessive vomiting from sea-sickness), he told the father that he apprehended that she might have a premature delivery. Such, therefore, was the general appearance of this lady, that a physician, merely judging from *appearances*, at once concluded she was pregnant.

"This was about the substance of what I learned of the previous history of this lady; and my opinion was then requested as to the character of her malady. My feelings were naturally very much enlisted in her behalf, and I proceeded with great caution in the investigation of her case.

"In placing my hand upon the hypogastric region, previously flexing the thighs upon the pelvis, I distinctly felt an enlargement, which, from its circumscribed character and position, I recognized to be the uterus. The abdomen was excessively tympanitic, and as much distended as it usually is at the seventh month of gestation. In making a vaginal examination, the enlarged uterus was plainly felt, and it presented a hardness to the touch which I had never before experienced. It was not the hardness of *scirrhus*, nor was there any pain experienced on pressure. The os tincæ was slightly dilated and perfectly circular. Projecting through it I felt a small body, which to the touch seemed to be of a calcareous nature. I could readily grasp the uterus between one hand applied to the hypogastric region and the finger introduced into the vagina; and it appeared to equal in size the fœtal head at full term. The organ appeared to be much more rounded in its development than is usual in pregnancy; and, on introducing the finger into the rectum, the same hardness of the tumor was experienced that was observed in the vaginal examination, but an entire freedom from pain. It was very evident that there was no pregnancy, and without hesitation I gave this as my opinion; at the same time stating that the enlargement of the womb depended most probably upon some internal growth, the precise nature of which I could not determine. That it was not a polypus was evident from the absence of all the symptoms which usually characterize it. After I had expressed my opinion that she was not pregnant, the only observation this interesting creature made was, 'Doctor, you are right.' These few words were full of meaning, and their import I could not but appreciate. The father was soon made acquainted with the result of my examination, and he seemed perfectly unmoved as I expressed to him my opinion. It was evident that he had never faltered for one moment in the belief of his daughter's virtue, and required no assurance from me or any other living being that his child had been cruelly abused. He asked me with great solicitude whether something could not be done to restore her to health; and his agitation was extreme when I told him that his daughter was in the last stage of consumption. I left him with the pledge that he would inform me of her dissolution, and afford me an opportunity, by a *post-mortem* examination, of testing the truth of my opinion. About four weeks from this time I received a note announcing the death of this lady, and requesting that I would immediately hasten to the house, for the purpose of making the autopsy. Dr. *Ostrom*, now practising in Goshen in this State, at my request, accompanied me, and assisted in the examination. It was discovered that the enlargement of the uterus was in consequence of a fibrous tumor which occupied its whole internal surface; and the small body which I had felt projecting through the os tincæ was a calculous concretion, of which there were several attached to the tumor. Plate No. 1, shows the exterior of the tumor; fig. 2, the circular character of the os tincæ. Plate No. 2. exhibits the internal structure of the tumor, with several small calculous concretions.

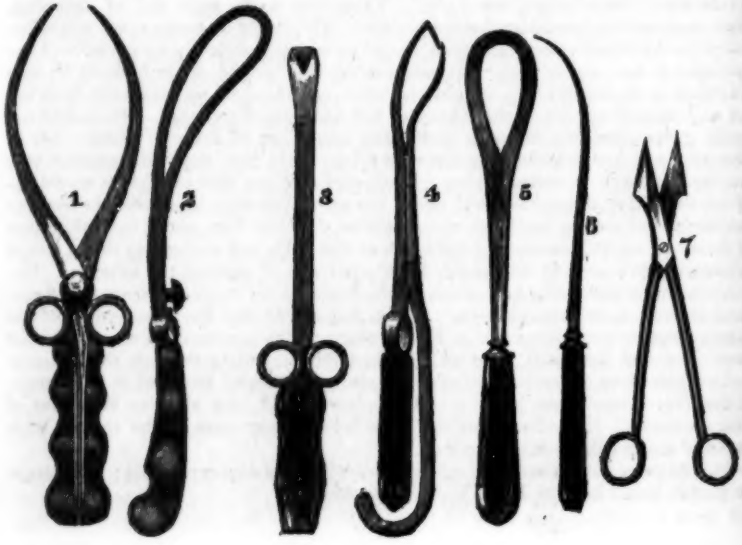
"The mere narration of this case carries with it its own comments; and I trust a proper moral may be drawn from its perusal."

(Plate 1.)



(Plate 2.)

Dr. Bedford seems also to have given considerable attention to the improvement of obstetrical instruments, which are here represented:



"The crotchet," he says, "is, indeed, a murderous instrument; and its use has been followed by the most fatal results. Under the most favorable circumstances, and in the most dexterous hands, it often does harm. It is well understood that it is never to be applied except on a dead child, or where the operation of embryotomy is called for. Its chief danger, therefore, regards the mother; for the purchase which this instrument takes on the child almost always gives way, and if the accoucheur is not particularly guarded, the soft parts of the mother, the bladder, rectum, or vagina, will be lacerated, often giving rise to the most disastrous consequences. To obviate this injurious tendency of the instrument, I have caused a guard crotchet (fig. 4 in the adjoining plate) to be constructed, which I offer to the attention of the profession, allowing its merits to rest upon the judgment they may form of its utility. The adaptation of this instrument to the particular indications to be fulfilled in the use of the crotchet will, I think, be found to be all that can be desired. Fig. 3 presents a front view, and in the centre of the blade is a groove for the reception of the guard, which slides with great facility to the point of the crotchet. The extremity of the guard on its external surface is convex and smooth, and so completely conceals the sharp point of the crotchet, as entirely to protect the soft parts from injury, even if the crotchet should slip during the tractions made on it by the accoucheur; for, in that event, instead of the bladder, rectum or vagina being torn by the point of the crotchet, these parts will suffer no injury, for the smooth surface only of the guard comes in contact with them. It will be seen that, at the other extremity of the guard, there is the ordinary blunt hook. This is important only as a matter of economy.

"Fig. 1 represents my forceps, which I believe embodies some important improvements; whether profitable or not, must also depend upon the judgment of my professional brethren. The curve of the blades, their lightness, and thinness (sufficiently strong, however, for all ordinary purposes), I regard as very essential improvements. The blades of the forceps are usually too thick, unnecessarily so; for this circumstance frequently prevents their introduction, especially if the head be unusually large, or the pelvis somewhat contracted. In my judgment, therefore, the thinner the blades, consistent with the strength required, the more advantageous will the instrument be found. Instead of the pivot lock, my forceps has the button joint, and the advantage of this mode of articulation over the pivot will be at once conceded on testing the relative facility of locking the branches. It appears to me that accoucheurs generally have paid too little attention to the handle of the forceps. I certainly do attach great value to this portion of the instrument, and I am well satisfied that the indifference of practitioners to this point has frequently led to failure in its application. In order to extract the head of the fœtus safely, something more is required than the mere adjustment of the blades; and if proper traction be not made, and proper *direction* given to the traction, the child will often be sacrificed, and severe injury ensue to the soft parts of the mother. To obviate these difficulties, therefore, and to furnish every facility for the safe extraction of the child, I have provided a handle (fig. 2) of sufficient length and curve. The curve at the extremity of the handle will afford greater facility to the operator, and give him more power than any forceps I have yet seen. To be satisfied of this fact, it is only necessary to apply the instrument on the manikin. The length of the handles likewise affords a proper lever for the tractions. The two rings will enable the operator to give proper direction to the force he employs, and will, at the same time, facilitate very much the lateral motion so essential to impart to the child's head during the stages of its delivery. Fig. 7 represents my pierce-crane, or perforator. Fig. 5 is the ordinary vectis.

"It is due to myself to state, that these instruments are not presented to the consideration of the profession from any fondness that I have for fame as an *inventor*—my ambition lies in a different channel. But they are the result of much reflection; and all I ask is, that they may receive that degree of favor to which, on fair trial, they may be found legitimately to entitle themselves.

"Mr. Goulding, 35½ Chatham-street, an ingenious and established cutler, is the manufacturer of these instruments, and deserves my thanks for the elegant finish he has given them."

The American editor was led to the selection of this work on account of its great practical merit, combined with pathological views equally valuable; and he has added to it, in the way of copious notes, much that is of a practical tendency.

ART. XIV.—*Principles of Medicine: comprising General Pathology and Therapeutics, and a brief general view of Etiology, Nosology, Semeiology, Diagnosis, and Prognosis.* By CHARLES J. B. WILLIAMS, M. D., F. R. S., Professor, etc. With additions and notes, by MEREDITH CLYMER, M. D., etc. Philadelphia: Lea & Blanchard. 1844. 8vo. pp. 384.

The same "with numerous additional notes, explanatory and critical, by the Editor of the Select Medical Library and Bulletin of Medical Science." Philadelphia: Edward Barrington and George D. Haswell. 1844. 8vo. pp. 396.

THE author's apology for the appearance of this publication, "that there is at present no work which fully treats of the subject of general pathology and its application to practical medicine," seems to have been wholly uncalled for, if we may judge from the circumstance, that two republications, each newly enriched with the valuable labors of an American annotator, have already appeared. Dr. Clymer's chief additions will be found in the sections on the blood, on diagnosis, and on prognosis, while two new chapters, one on fever and the other on hygiene, have been added. On the other hand, Dr. John Bell, whom, as well as Dr. C., we have the honor of claiming as brother editors, has been more copious in his notes, growing perhaps out of the fact, mentioned by himself, that on these subjects he had previously prepared a full course of lectures, and on some of the topics, he had published essays and even volumes. The amount of new matter furnished in these notes is about sixty pages. As the following extract from Dr. Bell's preface coincides with our own views, we will here introduce it to the reader:—

"The most correct idea of the present work, the one by which justice will be done to the intentions of the author, and the reasonable expectations of the reader gratified, is, to regard it as outlines, a text book in fact, rather than a comprehensive and finished treatise. While admitting its intrinsic merits and its additive character, on the subject of that part of pathology which chiefly engaged the author's attention, it would be affectation not to say, that, in some other parts, there is both meagerness and want of precision in doctrine and language. On pathogeny or pathology proper, as he terms it, the author has furnished data, in facts and suggestions, of undoubted value and freshness, for further elaboration and expansion; nor is there any lack, in the present volume, of frequent and available, if not actually novel, therapeutical deductions for practical medicine. The revelations of the microscope have enabled the author to enrich his pages by an exposition of minute morbid changes in the textures and fluids, explanatory of various pathological phenomena. It may be objected, however, that he has studied the ultimate organic elements, thus revealed, in connection with vital properties, somewhat to the exclusion of the proximate organic systems, or textures; and that he dwells on the modifications of the properties of the blood-vessels, to the oversight of those of the nervous system and its offices of maintaining sympathetic and associated actions.

"Therapeutical indications cannot be deduced from morbid anatomy. It remains to be seen whether organic chemistry and microscopy will be sources of more certain reliance; for, as yet, the indications which they have furnished have been anticipated by the results of experimental observation of vital actions and of clinical trials. In the present work, the practical deductions from this new fashion of pathology, the histogenic and chemical, are calculated to produce an impression of novelty, which is not sustained by a view of all the premises. The general inference, for example, drawn from the buffy and cupped appearance of the blood, that inflammation is present, and the exceptions to this view in particular cases, were taught and acted on long before recent hematology revealed the proportions of fibrin in this fluid. So, also, the excess of blood and its richness in plethora and in sthenic hemorrhages was well known, anterior to the demonstration of a superabundance of globules in these cases. Poverty of the blood in asthenic hemorrhages, chlorosis, scurvy, and other forms of anemia, was clearly admitted, until solidism, in its pride and exclusiveness, put the facts aside and set up a doctrine of its own. Equally well ascertained and proved by long experience, was the efficacy of chalybeates and a properly selected nutritive food for the cure of these affections.

"It is, however, a no small gain in the progress of experimental inquiry, to have ascertained the material origin of various pathological phenomena, and thus to be protected against future fluctuations of doctrine. We advance, also, with more confidence in the line of therapeutical indications, when we can positively connect in our minds, as the result of microscopical and chemical discoveries, the operation of a remedy with an ascertained change in the ultimate organic elements of the fluids and solids of the body. The present volume contributes a full share towards satisfying our minds on these points, and gratitude is due to its author accordingly.

"The title of this work is too comprehensive for the subjects discussed in its pages; and in the instance of General Pathology especially it will be a subject of regret that the author did not either narrow his ground, or, having marked out certain boundaries, did not strengthen his positions by more abundant and systematically arranged materials. These remarks and some preceding criticisms are proffered in this place, in order to exonerate the American editor from the charges of officiousness or vanity, in his endeavors to supply some of the omissions in the text by numerous notes, especially on Etiology and Semeiology, including Diagnosis and Prognosis; and, also, on Prophylaxis and Hygiene."—Pp. iii. iv.

We can do no more than exhibit the leading subjects investigated in this volume. After an introduction showing the need of the study of general pathology as the foundation of practical medicine, we have the following chapters: I. Etiology—on the causes of disease; II. Pathology (proper) or pathogeny; III. Proximate Elements of Disease; IV. Structural Diseases, or diseases of nutrition; V. Classification, Symptoms, and Distinction of Diseases; VI. Prognosis—foreknowledge of results of disease; VII. Prophylaxis and Hygienics.

In consideration of the advances made in recent years in the multitudinous subjects comprised in this branch of medicine, a special treatise must surely be quite acceptable; and this one, including the notes, more copious than usual, of the annotators, cannot fail to reward the reader both with pleasure and profit. Lea & Blanchard have given us the handsomer volume, as regards paper and typographic execution; but this, on the part of Barrington & Haswell, has been fully compensated by diminished price.

ART. XV.—*On the Nature and Treatment of Stomach and Renal Diseases; being an Inquiry into the connection of Diabetes, Calculus, and other Affections of the Kidney and Bladder, with Indigestion.* By WILLIAM PROUT, M. D., F. R. S., &c. From the Fourth Revised London Edition, with Plates. Philadelphia: Lea & Blanchard, 1844. 8vo., pp. 465.

THIS volume does not come before the reader a stranger; for, if he has not read a prior edition, its good character, at least, cannot have failed to reach his ears. We here find the practical application of numerous chemical facts to the elucidation of pathological phenomena, and consequently to the relief of many distressing morbid actions.

"Since the third edition was published, Professor Liebig's Treatises on Vegetable and Animal Chemistry have made their appearance, and attracted no little notice. Some of the views advanced by this distinguished chemist in his last work, are the same I have long advocated. Others of his views are directly opposed to mine, and seem to me to be neither susceptible of proof, nor even probable. The *practical* nature of this volume, however, precludes all controversy, particularly on matters of no *practical* utility; and I allude to the subject chiefly for the opportunity of observing, that having in the following pages stated my own opinions without reference to Professor Liebig, I leave it to the public to decide whether he or I have most nearly approached the truth."—P. 7.

The general arrangement and division of the subject comprise three parts, which are thus explained:

"PATHOLOGY, or the doctrine of Disease in general, is naturally comprised under three great heads or divisions, viz.—FUNCTIONAL DISEASES, or those derangements, arising from abnormal action of one or more organs of which animal bodies consist: ORGANIC DISEASES, or those diseases arising from actual lesions of one or more of the organs themselves; MECHANICAL DISEASES, or those diseases arising from mechanical causes; such as from the imperviousness or obliteration of organs by disease; or from the presence of foreign bodies, as, for instance, of calculi, &c., in the kidney or bladder. As, however, we rarely find diseases exclusively belonging to either of these three great divisions; and as the last two divisions, in particular, are almost always associated in those diseases of assimilation and of secretion which form the chief objects of this volume; we shall consider the practical part of our subject under two general heads only, viz.:

"FUNCTIONAL DISEASES; *or those diseases arising from the deranged operations and less obvious lesions of the assimilating and secreting organs; and*

"MECHANICAL DISEASES; *or those diseases arising from obvious lesions of organs; and from the presence of foreign bodies, as of calculi in the bladder, &c.*

"These two great classes of diseases will form the subjects of the first two BOOKS or PARTS, into which the *practical* portion of our Treatise is divided.

"A third BOOK or PART will comprise an

"OUTLINE *of the* GENERAL PHYSIOLOGY *and* PATHOLOGY *of assimilation; and of the* SECRETION *of the* BILE *and of the* URINE.

"In the former editions of our volume, the *third* BOOK or PART, was placed at the beginning, and constituted the INTRODUCTION. The reasons for inverting this arrangement have been briefly stated in the Preface of the present edition."—Pp. 25–26.

Book I. comprehends *Functional* diseases, arising from the deranged operations and less obvious lesions of the assimilating and secretive organs; and as this arrangement embraces some peculiar and valuable views, we deem it worth while to present Dr. Prout's preliminary remarks:

"The proximate alimentary principles by which the existence of animals is maintained, though much modified by the assimilating processes, are essentially the same as those principles of which animal bodies consist. This important fact being now generally admitted, we have here to show—that the processes by which alimentary matters are assimilated in animal bodies are constantly liable to be deranged, both in degree and in kind;—that such derangements of the assimilating processes are manifested by corresponding derangements in the various products secreted from animal bodies by the organs designed for such purposes, and particularly by the kidneys and liver; and, lastly, that the relations existing between the deranged products of secretion and the proximate principles by which animals are maintained, and of which their bodies consist, enable us, in many instances, to acquire a more correct knowledge of the organ deranged, as well as of the nature of its derangements, than can be obtained by any other means.

"The proximate alimentary and staminal principles of animals consist of four great classes, viz.: the Aqueous, the Saccharine, the Albuminous, and the Oleaginous classes; and in conformity with this constitution, we shall consider the Pathology of the assimilating processes under four similar heads. The first Book or Part of our Treatise, therefore, will comprise the following subjects:

"Chap. I. General observations on the Pathology of Aqueous assimilation and secretion.
Section a. Of the relation of Fluids to the assimilating processes in Health and in Disease.
b. Of the relation of Fluids to Nephritic operations in Health and in Disease.

"Chap. II. General observations on the Pathology of Saccharine assimilation and secretion.
Section a. Of Saccharine urine. *Diabetes.*
b. Of Oxalic acid; Oxalate of Lime.
c. Of Lactic acid.

"Chap. III. General observations on the Pathology of Albuminous assimilation and secretion.
Section a. Of an Excess and Deficiency of Urea.
b. Of Albuminous urine.
c. Of Lithic acid.
d. Of Cystic Oxide.

"Chap. IV. General observations on the Pathology of Oleaginous assimilation and secretion.
Section a. Of an Excess and Deficiency of fat.
b. Of Cholesterine and its deposites, &c.

"The important class of diseases, arising from the Mineral matters incidental to the proximate animal principles, will be separately considered under the head of

"Chap. V. General observations on the Pathology of the Incidental Mineral matters entering into the composition of organized bodies.

"Since, from the nature of the preceding arrangement of our subjects, the *abnormal condition of the secreted products* is supposed to constitute the prominent feature of the derangement, or, in other words, the DISEASE; in speaking of the individual derangements or diseases, we shall first describe the abnormal state of the secretion constituting the Disease; and afterwards point out the general constitutional symptoms or derangements by which the abnormal state of the secretion is usually accompanied. These points being considered, the Diagnosis, Prognosis, and Treatment of the peculiar derangement, will follow in the usual manner."

Book II. treats of *Mechanical Diseases*, including those arising from obvious lesions of the kidney and bladder, and particularly from the presence of concretions in these organs.

Book III. which, in the previous editions, constituted the Introduction, it is seen assumes here an entirely new place. This, which comprises an outline of the general physiology and pathology of assimilation, and of the secretion of the bile and the urine, "*contains a brief sketch of the general physiological and pathological views on which the preceding practical treatise is founded.*" Here, then, in the very face of his own assertion, we find a man, remarkable for his powers of close reasoning, building up an argument somewhat after the manner of an inverted pyramid. He admits, at least, that after raising what is truly a noble superstructure, he will lastly make a good foundation. But as even Homer, it is said, sometimes nods, we are quite willing to forgive the same fault in the author here before us, more especially as the good materials predominate over the useless beyond all measure.

We are now prepared to enter upon an analysis of this work, which, as it is not an elementary text-book, deserves an extended notice; but we are admonished to desist for two reasons—first, the crowd of volumes on our table remaining unnoticed, and secondly, the space, though far from being *comparatively* limited, allowed to a $3 Journal.

ART. XVI.—*A Treatise on Dislocations and Fractures of the Joints.* By Sir ASTLEY COOPER, Bart., F.R.S., Sergeant-Surgeon to the King, etc. A new edition, much enlarged, edited by Bransby B. Cooper, F.R.S., Surgeon to Guy's Hospital. With additional Observations, and a Memoir of the Author. Philadelphia: Lea & Blanchard. 1844. 8vo. pp. 499.

So well and favorably known is this work, both in Europe and in America, that we need refer to it only in the most general terms: and it requires not the gift of prophecy to add that, as long as civilisation continues, this treatise, in view of the precious precepts and experience embodied in its pages, will continue to be consulted.

This work, in its original form, appeared in 1822; and in its subsequent revisions for successive editions, new observations, both from his own practice and from that of his numerous friends and correspondents, were constantly added. At his death, he left in the hands of his nephew, Mr. Bransby B. Cooper, large additions, so that the present edition em-

bodies the results of the large experience and observation of his whole life. It is also enriched with observations from notes furnished by Professor John C. Warren, of Boston, upon dislocations of the hip, upon fractures of the cervix femoris, and the comparative infrequency of the former in females. As this unfrequency of dislocation of the os femoris in females, is a new fact of great interest, we will present Dr. Warren's account at length.

"The comparative unfrequency of dislocation of the os femoris in the female, has not, that I know of, been distinctly pointed out by any author. Having had occasion to advert to this fact eight years since, I then examined the cases of dislocation, which had come under my notice, and found that, in the experience of more than thirty years, not a single case of dislocation of the os femoris in the adult female had ever occurred to me, and only one case in a female under age, namely, about nine years old. Since then I have seen not less than fifteen cases of this dislocation, all of which occurred in males.

"Curious to ascertain how far the experience of others accorded with mine, I took the opportunity of making inquiry of different surgeons, when travelling in Europe, in the years 1837 and 1838. The gentlemen, of whom I inquired, were generally surprised at the question, as they had never adverted to the extreme unfrequency of this dislocation in the female.

"For some time I could not ascertain a single well authenticated instance of this accident. The first which occurred was mentioned to me by Mr. Clift, Conservator of the Museum of the Royal College of Surgeons, London. The case given me by him was that of a female, who was tossed by a bull in Smithfield market; she came down upon her feet, and the two legs being violently separated from each other, a double dislocation into the foramina ovalia was the consequence. The bones were never reduced. After her death the pelvis was obtained, and ultimately deposited in the Museum of Anatomy at St. Petersburgh. Subsequently I heard of a few instances, and particularly from my friend Dr. Stevens, of New York, who stated, that he had seen two or three cases. Sir Astley Cooper mentions above fifty cases of dislocation in the male, but one only in an adult female, and one in a female under age.

"As most of the surgeons, of whom I have inquired in Europe and in this country, have never seen the accident, it must be exceedingly rare. Fracture of the cervix of the os femoris, on the other hand, is one of the most frequent of all fractures in females and comparatively rare in males. This remarkable difference in the two sexes naturally leads to the inquiry, whether the accident peculiar to each can be explained by any variation in the anatomical structure.

"It will not be proper in this place to enter into the consideration of the causes which render the female frame less liable to the preceding, and to many other dislocations, than that of the male. I must be contented with mentioning an anatomical fact, and one which appears to me to be calculated to throw light on this subject. The observation of nine instances of measurement of the circumference of the neck of the thigh bone in the male and female, has presented the following results:

1.	Male,	4 inches.
2.	do.	3.9 do.
3.	do. (African)	3.6 do.
4.	do.	3.8 do.
5.	do.	3.8 do.
6.	do.	4.8 do.

Average in the male 3.9 inches.

7.	Female,	3.3 inches.
8.	do.	3.3 do.
9.	do.	3.3 do.

Average in the female 3.3 inches.

"From these observations it would appear, that the cervix of the os femoris in the female is less in circumference, by at least half an inch, than the same part in the male. This being the fact, a force applied to the os femoris would be much more likely to produce fracture of the cervix in the female than in the male, and the comparative frequency of dislocation in the female would be necessarily diminished.

"Another fact, which explains the more frequent occurrence of fracture of the cervix in the female, is, that the greater breadth of the pelvis in them produces a corresponding projection of the trochanter, which of course renders it more obnoxious to external violence."—Pp. 97-8.

It was unfortunate for the reputation of Sir Astley Cooper, that his papers fell into the hands of his nephew, Mr. Bransby B. Cooper. Besides other faults, he has taken the liberty, wholly unjustifiable on the part of an editor, of even condensing, in several instances, the original text. But it is in the biography of Sir Astley, that his course deserves the most severe condemnation. It is said truly that "Mr. B. Cooper has thus done much to debase the reputation and fame of his uncle, and to degrade the profession, of which he was so distinguished a member."

ART. XVII.—*The Principles and Practice of Medicine.* By JOHN ELLIOTSON, M. D., Cantab., F. R. S., President of the Royal Medical and Chirurgical Society; President of the Phrenological Society; Late Professor of the Principles and Practice of Medicine, and of Clinical Medicine, and Dean of the Faculty of Medicine in University College, London; Late Senior Physician to the University College-Hospital; Fellow of the Royal College of Physicians; Formerly Physician to St. Thomas's Hospital; and President of the Royal Medical Society of Edinburgh. Edited by Nathaniel Rogers, M. D., etc., and Alexander Cooper Lee. First American, from the second London Edition, greatly enlarged and improved. With Notes and Additions, by THOMAS STEWARDSON, M. D., etc. Philadelphia: Carey & Hart. 1844. Large 8vo., pp. 1046.

SEEING the ponderosity of this tome, the reader need not be surprised at the number of builders that have been engaged in its construction. It appears that the basis of this work consists of Dr. Elliotson's lectures, published some dozen years ago, in the London Medical Gazette. The reason why Dr. Rogers and Mr. Lee, instead of Dr. Elliotson himself, should have undertaken the task of remodelling these lectures, with the view to their resuscitation under the new form of a regular book, is unknown to us; but we learn from the Preface that "the subjects have been grouped together, in conformity with Dr. Elliotson's views; and divided into parts, books, chapters, and sections." It is further stated that when this work first appeared, it had to encounter some deeply rooted prejudices among certain men who dissented strongly from Dr. E.'s views on particular subjects. But despite these obstacles (Quere—Mesmerism?) the first impression was rapidly exhausted. It became "the favorite class-book in the majority of our Medical schools." All acknowledged its sterling practical worth; and in Germany, a translation of it appeared. The edifice of these builders finally received, on this side of the Atlantic, its finishing touches by the competent hand of Dr. Stewardson, who has

given a more extended space to the consideration of Remittent and Yellow Fever, and to Cholera Infantum, with other less important additions on various subjects.

Our author first treats of general pathology; such as, the nature of disease, general nosology, etiology, semeiology, the general treatment of diseases, and methodical nosology. Part I. has reference to general diseases; as, for instance, inflammation, hemorrhage, dropsy, deficient secretions, changes of structure, transformations of structure, and new formations. Part II. is devoted to "universal" diseases; such as, anæmia, chlorosis, scurvy, and the different forms of fever. Part III. consists of the consideration of local diseases, which are arranged as follows: diseases of the skin, of the nervous system, of the respiratory organs, of the heart, of the chylopoetic viscera, of the urinary organs, and the fibrous tissues.

Without attempting an analysis of this matter-of-fact volume, we will add in conclusion, that, regarding, as we do, Dr. Elliotson to be a bold and original thinker, endowed with a mind richly stored with various and classical knowledge, an experienced practitioner, a judicious teacher, and a forcible and an eloquent writer, we take pleasure in commending this treatise to the kind attention of our readers.

ART. XVIII.—*Lectures on the Principles and Practice of Physic;* delivered at King's College, London, by THOMAS WATSON, M.D., etc. Philadelphia: Lea & Blanchard. 1844. 8vo., pp. 914.

AT first view we were much prejudiced against this volume, judging it solely by its typographical aspect. Our sympathies were at once excited for all readers with weak eyes. Indeed, we fancied that the publishers had formed some unholy league with the tribes of oculists and spectacle-makers. But when we came to view it *intrinsically*, our only regret was that so good a book should be sent forth to the world without any of the advantages conferred by external dress. It is, in fact, a marked illustration of "beauty unadorned."

These lectures, which were first delivered during the Medical Session of 1836-7, were subsequently published in the London Medical Gazette, and have since appeared, in this country, in the columns of the Medical News. A more admirable summary of general and special pathology, and of the application of therapeutics to diseases, we are free to say, has not appeared for very many years; and the author seems to have fully realized the duties of a lecturer on medicine, aptly expressed by Lord Bacon in the following metaphor, which is thus paraphrased by Dr. Watson:

"The lecturer must not be the ant, collecting all things indiscriminately from all quarters, and using them as provender for his discourses;

"Nor the spider, seeking no materials abroad, but spinning his web of speculative doctrines from within himself;

"But rather the bee, extracting crude honey from various flowers, storing it up in the recesses of his brain, and subjecting it to the operation of his internal faculties, until it is fit to be produced, digested, and ready for use."

This volume consists of ninety lectures. The first sixteen are devoted

mainly to general pathology, embracing etiology and general therapeutics. The remaining seventy-four lectures give an excellent exposition of special pathology, including the etiology, semeiology, diagnosis, prognosis, pathology, and treatment of individual diseases. Thus he proceeds through the whole classification of human ills, *a capite ad calcem*, showing, at every step, an extensive knowledge of his subject, with the ability of communicating his precise ideas, in a style remarkable for its clearness and simplicity.

ART. XIX.—*Medical Clinic: Diseases of the Chest.* By G. ANDRAL, Professor to the Faculty of Medicine of Paris, etc. Condensed and Translated, with Observations, by D. SPILLAN, M. D., etc. Philadelphia: Edward Barrington & George D. Haswell. 1843. 8vo., pp. 408.

THIS is another reprint in Bell's "Select Medical Library;" and, as we remarked, in a previous Number, relative to some other work contained in this library, this production, too, speaks in the plainest language in favor of the discriminating judgment of the editor, exercised in the selection of his materials. In this volume, which treats of the diseases of the heart and the lungs, is accumulated a vast mass of the most valuable clinical observations, in which the physical means of exploring disease have been very fully adopted. Such a work ought to constitute a study for every practical physician.

ART. XX.—*Practical Medicine: Illustrated by Cases of the most important Diseases.* Edited by JOHN M. GALT, M. D. Philadelphia: Edward Barrington and Geo. D. Haswell. 1843. 8vo., pp. 328.

HERE we find three Doctors Galt, viz., John M., the editor of this work, Alexander D., the father, and also the collector of the cases of which this volume is composed, and John M. Galt, the grandfather; and these three have succeeded one another as "well-known and highly esteemed practitioners," in the same locality of Williamsburg, Virginia. It is true, that Dr. Galt *tertius* does not include himself in this good opinion of his neighbors; but it may be fairly inferred, in consideration of such worthy sires, and of the fact that he has the laudable desire of perpetuating their names, that he is "a chip of the old block."

The collection of cases here presented, are selected from the papers of the editor's father, who, after studying several years in the office of *his* father, that is, Galt *primus*, proceeded to London, where he was a pupil of Sir A. Cooper. On his return to Williamsburg, he soon became distinguished as a practitioner; and for many years, he was surgeon to the State Lunatic Hospital.

These cases were drawn up amid the hurry and distractions of a country practice. They consist chiefly of Intermittent and Remittent Fevers, Inflammations of the Pleura, Lungs, and Bronchia, Colic, Dysentery, and Rheumatism; and as they are doubtless descriptive of the endemic influence of that district of our country, it is in this that their chief value consists—a value which surely authorized their publication.

ART. XXI.—*Lecture Introductory to a Course on Chemistry in the University of Pennsylvania, delivered November 7th*, 1843. By ROBERT HARE.

Introductory Lecture to the Course of General, Descriptive, and Surgical Anatomy, in Jefferson Medical College, delivered November 8th, 1843. By JOSEPH PANCOAST, M. D.

A Lecture Introductory to the Course on Obstetrics in Geneva Medical College, session of 1843–4. By C. B. COVENTRY, M. D.

THESE addresses are all valuable, and each is appropriate to its particular occasion.

Dr. Coventry's address is devoted to the general subject of quackery; and in the opportunity thus presented of handling the subject of Homœopathy, he fails not to represent it in its true aspect.

It is Dr. Pancoast's particular object, in this introductory lecture, to impress upon the mind of the student the very important fact, that the value of a course of anatomical instruction depends upon the extent of its application to the practical pursuits of our profession. The advance of science has, in recent years, taught the high importance of a knowledge of the relation of parts, as regards their use in medicine and surgery, thus precluding a divorce between these kindred pursuits.

"But it is, gentlemen," he says, "in the productions of modern times, and of practical men, that you are to seek this important instruction. Look at these productions as you find them in our libraries or upon our tables. They are but little more exact in the delineation of parts, than those of the older masters, but yet how much more useful have they been to the world! These have been the works of such men as Hunter, and Scarpa, and Cooper, and Velpeau,—men engaged daily, not in the business of dissection as an abstract pursuit, as pointless as though they were studying the stars, but whose sole aim has been to study profoundly the structure of the human form, for the purpose of applying that knowledge to the elucidation of the nature of disease and the demonstration of the readiest and most certain means of cure.

"In fact, though it may sound somewhat paradoxical to say it, I could, did time permit me here, no doubt make it clear to you, that while there never has been and never can be a surgeon of any enduring reputation, who was not a thorough anatomist, it has on the other hand been the surgeons themselves who have taught the anatomists the proper application of their own science. On the past history of the science would I found my arguments.

"How imperfect was our knowledge of the structure and direction of the urethral passage, till Amussat and Civiale had made it, in reference to operations, a particular subject of study! What was known of the crural and inguinal canals till the time of Gimbernat, Scarpa, and Cooper! The anatomy of the articulations!—has not even it, so far as practical usefulness is concerned, been almost wholly made known by the accurate investigations of Lisfranc and Malgaigne! Thousands of times have the parts in the orbit of the eye been demonstrated, yet some important fasciæ have lately been discovered in that region, which had escaped observation, till they were sedulously examined in reference to the operation for strabismus. Compare all the classical anatomical descriptions of the eyeball, with the careful conscientious study of it made by Petit, in a surgical point of view, and see how vast is the difference in point of interest and utility."

In Dr. Hare's address, we are made acquainted with the recent extraordinary advances of Chemistry. As regards Liebig's physiological speculations, he makes the following judicious remarks:

"In these I conceive he has in various instances been bold, hasty, inconsiderate, and inaccurate, but still has advanced many ingenious ideas which are likely to be highly serviceable to physiological chemistry. He has quite as much merit in holding up ideas, before existing. in a new and popular form, as in suggesting such as are altogether original. Yet I would liken him to a military leader, who, after marching through a country, with drums beating and colors flying, should have his trumpets loudly sounded, as if a complete conquest had been effected, while leaving behind him many fortresses, of which the knowledge had prevented more cautious and considerate leaders from having previously undertaken the same expedition. Nevertheless, by these means the philosopher of Giessen has excited a degree of attention, in the great mass of physicians and agriculturists, which had never been gained, had he neither deluded himself nor the readers of his essays with the prospect of an elucidation of the mysteries of animal and vegetable physiology, which it is beyond the present state of chemistry to afford. Moreover, the popularity which he has thus gained, may lead others to follow in the same path, who may rectify his errors and remedy some of his omissions without impairing what is really true in his doctrines.

"There can be no better exemplification of the errors to which Liebig is addicted, than his adoption of the following maxim:—'*There are many ways to the highest pinnacle of a mountain, but those only can hope to reach it who keep the summit constantly in view.*' It must be evident to every person of any experience, in ascending mountains, that although it may be necessary to keep the *bearing* of the summit in *mind*, our eyes must be upon the path; and that, in most cases, the safest and easiest mode of access causes the summit to be concealed for a time. A person who should implicitly follow Liebig's advice, would probably fall over some precipice, or tumble into some fissure which might escape notice while keeping the summit of the mountain *constantly* in view. Is not the fallacious rule of action, above quoted, a good figurative illustration of a theorist, who, keeping his mind too much upon some hypothetical acme, overlooks insurmountable objections which a close attention to facts would make evident! Has not Liebig exemplified his own course?"

Dr. Hare refers in appropriate language to Liebig's "contemptuous allusion to the vital principle;" but he gives, at the same time, a due meed of praise to the labors of this extraordinary man.

"Among the greatest wonders," says Professor Hare, "of organic chemistry, is the acquisition of power, by elements otherwise inert, from mere grouping. The hempen cable, of which a given section has more strength than an equal weight of iron forming a chain, consists of nothing but water and carbon, into which it is easily resolved by the application of heat. By fire we may fuse or oxidise the iron, and thus equally deprive its particles of strength; but, on collecting the resulting fragments, metallurgic skill can elaborate another chain, the cohesive power of the metallic particles having been subdued, not destroyed; but no human skill, unaided by the powers of vegetable life, can regenerate another cable from water and carbon.

"Subjected to ultimate analysis, prussic acid, which is so fatal to animals, consists only of three of the ingredients of their flesh or blood. It is constituted of nitrogen, one of the elements of the air which animals breathe, of hydrogen, one of the elements of the water which they drink, and of charcoal, which, per se, is inert."

PART THIRD.

1.

Foreign Medical Intelligence.

ANATOMY AND PHYSIOLOGY.

The three following extracts are from Mr. James Paget's Report on the progress of Anatomy and Physiology, in the year 1842–3, as published in the British and Foreign Medical Review.

1. *Salivary Secretion.*—Dr. Budge has found that after extirpation of the parotid, submaxillary, and sublingual glands in a dog and a rabbit, the secretion of saliva continued; its characters remained the same, and no function was disturbed. [The experiments add probability to the opinion that the labial, buccal, palatine, and other glands which the experimenter left behind, are salivary glands.]

A case of a kind of metastasis of the salivary secretion is related by Dr. Roelants, and is interesting in its relation to the general physiology of secretion. A man, eighty-two years old, had an attack of bronchitis, with fever, followed by suppuration around and probably in one of the parotid glands. The abscess was opened, and two months after a large mass of chalk-like substance was discharged. The abscess soon healed, and he recovered his health; but now, whenever he masticates, saliva flows freely from the skin of the cheek and temple of the side formerly diseased. As soon as he begins to eat, the skin becomes very full of blood, and hot; and gradually drop after drop of clear fluid, with all the characters of saliva, collects on its surface, and runs down the cheek and neck, and continues to do so just as long as he continues eating. His health is not disturbed, and the saliva-secreting surface of the skin is natural in its texture.

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2. *Process of Ossification.*—In the same work is a description of the process of ossification, which is, in several points, new and interesting (p. 117). In the vicinity of the point of ossification the nucleated cartilage-cells (which usually are scattered irregularly) arrange themselves in linear series, which run down, as it were, to the ossifying surface. At first the series are small and not regular, but nearer to the ossifying part they form rows of twenty or thirty. The cells in these rows are closely compressed, and their nuclei seem flattened. The lowest rows dip into and rest in deep narrow cups of bone, formed by the osseous transformation of the intercellular substance between the rows, and as ossification advances these cups are converted into closed areolæ or *cancelli*, with extremely thin lamelliform walls. Immediately upon the ossifying surface, nuclei, which before were closely compacted, separate considerably from one another by the increase of material within the cells: they also often enlarge and become more transparent. Deeper in the new bone the lamellæ which inclose the cancelli, and which were formed by the ossification of the intercellular substance, are found thicker and more like perfect bone: they include in their substance elongated oval spaces, which, except that they are roughly granular, exactly resemble the ordinary *bone-corpuscles*, and which are evidently the nuclei of the cells of the temporary cartilages. The curvilinear outline of the now ossified cells of these nuclei can often be discerned. Within the cancelli only a few cells can be detected, these cavities (of the cancelli) being chiefly occupied by a quantity of new substance, consisting of granules, and resembling a formative blastema or basis. It thus appears that after the ossification of the intercellular substance (by which are formed the lamellæ which are the walls of the cancelli), the rows of cartilage all arrange themselves on the

inner surface of these newly-formed cancelli, and are ossified, with the exception of their nuclei, which remain granular, and subsequently form the corpuscles of bone; and that a new substance or blastema appears within the cancelli, from which, probably, vessels are developed, and the further steps in the growth of the bone proceed.

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3. *Absorption.*—M. Lacauchie describes the intestinal villi as possessing during life a power of alternately retracting and elongating themselves by a kind of vermicular motion, which he believes to be influential in the propulsion of chyle. And his account, so far as these movements are concerned, is confirmed by MM. Gruby and Delafond, who have observed them in the recently-slain horse, dog, and rabbit. They add that besides the movements of retraction and elongation, the villi are capable of moving laterally in all directions, and that their epithelium-cells bear ciliæ.

Some experiments by Dr. Behr may serve, perhaps, to explain somewhat of that which was supposed to depend on an elective power of absorption possessed by the lymphatics, and certainly have added much to the probability that the force by which the lymph is carried along the lymphatics is that of the contraction of their walls. It has been long known that the lymphatics will not convey certain substances, especially narcotic poisons, while they do carry others. If, for example, the animal's abdominal aorta be tied so as to stop the circulation in its posterior extremities, and ferrocyanate of potass be inserted in a wound in one of them, it is absorbed and carried into the blood by the lymphatics, and is found again in the urine. But if, under the same circumstances, a narcotic poison is put in the wound, the animal is not killed by it; and it was supposed that the lymphatics in this exercised some kind of choice. The results of Dr. Behr's experiments are these: 1. Acetate of strychnine was introduced into a wound in an animal's leg, while the circulation was uninterrupted, and death, with convulsions, &c., occurred in five minutes. 2. Ferrocyanate of potass was introduced into a similar wound, and ten minutes after acetate of strychnine into another wound: in four minutes the animal died of the poison, and the ferrocyanate was found in the urine. 3. The same substances were introduced together into a wound in the leg: the animal died poisoned, and even sooner than before, and the salt was found in the urine. 4. The abdominal aorta was tied below the renal arteries, and when the hind limbs were paralysed the acetate of strychnine was put into a wound in one leg and the ferrocyanate of potass into a wound in the other. After two hours and a half there were no signs of poisoning, but on killing the animal the salt was found in the urine. 5. The abdominal aorta was tied as in No. 4, and the acetate of strychnine and ferrocyanate of potass were introduced into the same wound. The animal showed no signs of poisoning, and the salt could not be found in the urine. This last experiment was several times repeated, and, with unimportant variations, with a constantly similar result. It would follow, therefore, that when the circulation in the blood-vessels is stopped, the lymphatics can absorb and convey to the blood ferrocyanate of potass, but not acetate of strychnine; and that when the two substances are applied to them together it can absorb or carry neither. Hence it is supposed that the force by which the lymphatics convey fluids is that of the contraction of their walls, and that they are paralysed by the direct contact of narcotics, as other involuntary muscles are.

Mr. George Robinson has related some experiments in evidence that the absorption of blood-vessels depends on a force generated by and proportioned to the velocity of the blood which is moving in them. He compares it to that force with which water or any other fluid traversing a main tube will draw fluid through a side branch, even against the weight of a considerable column. He has often repeated this well-known experiment, and has added proof that the same force will act in the same way through one or more membranes. Having filled a wine-glass with colored fluid, and having connected its contents (by means of a bent tube twelve inches long and one-fourteenth of an inch in diameter, and having one of its ends covered with membrane), with the interior of a pipe half an inch in diameter, he found that within five minutes after the

stream had begun to flow rapidly through the last-mentioned pipe, the whole of the air present in the smaller tube was absorbed, and its place supplied by the colored fluid, which had risen from the glass. In another experiment the fluid from the glass was raised through a shorter tube to the membrane, and was made to flow in a slow but constant stream towards the fluid, passing through the larger pipe.

MEDICAL PATHOLOGY AND PRACTICAL MEDICINE.

4. *On the use of Ammonia in Tic Douloureux of the Face and Head.*—M. *Ducros* recently communicated to the Academy the details of some well-marked cases of this distressing disease, which were rapidly cured by the use of strong ammonia, applied to the palate, gums, &c., with a camel-hair brush, so as to occasion a profuse discharge of tears and saliva. He requested the physicians of several of the metropolitan hospitals to repeat his experiments on a large scale; and the results of their trials have been, he says, most satisfactory.

(The strong Aqua or Liquor Ammoniæ, taken internally, will be found to be a most valuable remedy in many cases of neuralgic suffering about the face and head, odontalgia, severe nervous headache, &c. The best mode of administering it is to mix from 20 to 40 drops in a cupful of very thick gruel, and to take this at bed-time, or whenever the paroxysm of pain is present. The ammonia must be well blended with the gruel, else it will irritate very painfully the inside of the mouth and throat. It should produce a profuse salivation and lachrymation. In very severe or obstinate cases, it may be applied outwardly at the same time.)—*Medico-Chirurgical Review, for January* 1844.

5. *French Tisanes.*—Doctor Higgins, an English physician, resident in Paris, has published in the *Gazette Médicale*, a letter on the use and abuse of Tisanes in France.

6. *Remarks on Indian Hemp.*—The *apocynum cannabinum* is sold in London under the name of "Indian hemp." It is a native of Canada and Virginia, and has no resemblance to the true hemp, except in possessing a tough, fibrous bark, which is applicable to the same purposes in the arts. In the U. S. Pharmacopœia it is termed "Indian hemp." The officinal part is the root, which is powerfully emetic and cathartic. But the part which I have seen supplied as Indian hemp consists of the leaves and the follicles filled with numerous silky seeds. As the follicles are two or three inches long, and the silky seeds are abundant, they can hardly have escaped the notice of those who may have inadvertently used this article under the idea that it was the hemp from India. The true Indian hemp, or "gunjat," is our common hemp; and consists of the flowering branches, two or three feet long, nearly destitute of leaves, and having the flowers and fruit (hemp-seed) agglutinated together by the resinous secretion. As the most powerful antispasmodic properties have been attributed to this plant, it is important that no false conclusions should be drawn in consequence of the employment of a wrong article. I am not aware that any real Indian hemp is at present in this country, except the supply recently brought by Dr. O'Shaughnessy, and left with Mr. Squire, of Oxford-street. We have at present little experience of the medicinal properties of English hemp. A hotter climate, a more intense light, and a different soil, may give to it properties which are scarcely developed in this country, but as the resinous secretion is not wanting here, it appears deserving of a careful trial.—*Braithwaite's Retrospect*, from *Med. Gaz., May* 5, 1843, *p.* 209.

7. *Veratria in Facial Neuralgia.*—An ointment composed of veratria, one part, to eighty parts of lard, has been found very useful as an external application in cases of facial neuralgia. But the preparation is much more efficacious if made with rancid instead of fresh lard, which is probably owing to a salification and greater solubility effected in the veratria by the agency of the free acid in the fat.—*Ibid.*, from *Revue Scientifique.*

8. On *Discharges from the Urethra; and on the Influence of Creosote in Mucous and Sanguineous Discharges.* By R. A. Alnatt, M.D., etc.—Mr. James Douglas, in a late number of the Medical Gazette (Sept. 29), has detailed a case of what he conceives to be spermatorrhœa, arising from masturbation, and has suggested a remedy which appears to have been as efficacious as Lalleman's plan of cauterizing the urethra; and it certainly possesses the advantage of being much less hazardous to the patient. There is one point, however, in the communication, upon which I feel a little doubtful, and that is respecting the loss of *semen*, which is alleged to have occurred "without ejaculation, and with scarcely any erection." A case closely approximating to that of Mr. Douglas fell under my notice a short time ago, and first awakened the suspicion which subsequent facts have tended in some measure to confirm. The case is this:

"A man, aged 33, unmarried, who had from puberty been addicted to a solitary vice, contracted at a large boarding-school, came to me in great alarm, stating that when at stool, frequently in making water, and sometimes too in sleep, in the absence of libidinous emotions, he lost a considerable quantity of semen. Upon inquiring into the case, I was led to question the nature of the discharge; and putting him in the way of instituting for himself a careful and minute observation, I subsequently learnt that it consisted of limpid colorless mucus, without the sensible characteristics of pure seminal fluid. The testes in this instance were healthy, not particularly pendulous, and certainly not so flaccid as they should have been had a perpetual drain of their secretion been established. This patient was placed under a course of chalybeate tonics: and without the aid of cauterization, or other local applications, he gradually recovered.

"From the anatomical structure of the parts, we can fully comprehend how by long-continued preternatural excitation, they may ultimately lose their tone, fall into a state of debility, and the secretions from the patulous orifices of the weakened vessels may be augmented. The prostate secretes a ropy mucus: the glands of Cowper, seated anteriorly to the prostate, also secrete mucus: mucus is secreted in abundance, in certain morbid affections, by the internal coats of the bladder; and the canal of the urethra is bedewed with mucus from the glands and lacunæ scattered throughout its course. A mechanical obstruction is, moreover, I believe, offered to the flow of semen, during the passive state of the organ, by the *sinus Pocularis*, whose mouth being directed forward, forms a valve, which is closed by the collapsed urethra: at all events it is hermetically sealed, during micturition, by the force of the stream, so that no semen can escape, 'during the time of making water.'

"Under these circumstances I rather incline to the belief that, in the majority of cases cited by recent authors, the fluid passed is not seminal but mucous; but I shall be glad to learn if there be any *test* to facilitate the discrimination.

"I have published, from time to time, in the medical periodicals, cases which presented themselves to my notice, in which the direct application of creosote to morbidly secreting mucous tissues was followed by speedy amelioration of previously existing symptoms. The first case to which I directed the attention of the profession was that of gonorrhœa (*Med. Gaz.*, Feb. 28, 1840), in which the discharge was subdued by this remedy in the course of a few days. The next was a case of inveterate fluor albus, the details of which appeared very lately. I have just now met incidentally with another case of gonorrhœa, in which the discharge was copious and thick, of several months' duration, and not at all inclined to degenerate into the thin gleety secretion of chronic clap. In this case (for I need not enter into detail) the discharge was arrested at once by the creosote injection, and has not since returned. I may mention, however, that in consequence of the sudden stoppage of the flux, an eruption appeared on various parts of the body, resembling syphilitic psoriasis. It speedily yielded to gentle laxatives, combined with tonics.

"The next case is that of purulent otorrhœa: William Payne, Charles street, Westminster, one of my morning patients, came to me about a fortnight ago, on account of a discharge from the left ear. The external meatus was filled

with thick pus, and the lobe of the ear, and all the parts adjacent, to which the acrimonious matter gained access, were inflamed and excoriated. I ordered an injection, composed of a drachm of creosote, the same quantity of liquor potassæ, and six ounces of water, to be frequently thrown into the tube. The ear and excoriated surfaces were defended by a simple unguent. At the present time the discharge has completely ceased, the natural functions of the organ have been restored, and the sores are healed."—*Bell's Bulletin, Dec.*, 1843.

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9. *New preparation of Quinine.*—Dr. Kingdon, of Exeter, having felt the utility in practice of quinine as a tonic, in cases in which a stimulus to the absorbents also was indicated, has recently succeeded in combining the qualities of these two classes of medicines in an iodide and biniodide of quinia. His iodide of quinine is formed by dissolving equal weights of the disulphate of quinine and iodide of potassium in boiling distilled water, and allowing the mixture to cool, when beautiful fasciculi of needle-shaped crystals are deposited, insoluble in cold water, but soluble in alcohol. The biniodide of quinine is prepared by mixing twice the weight of iodide of potassium with the disulphate of quinine in boiling distilled water, evaporating to one-third in a sand-bath, and allowing the residue to cool, when a resinous substance is deposited of a light straw-color, which, by exposure to the air, becomes darker and of a greenish hue, not crystallizable, sparingly soluble in cold water, soluble in boiling water, readily soluble in alcohol, and then not precipitated when mixed with water. This preparation he has given in several cases of scrofulous enlargement of the glands, with very great benefit. In the case of a child, between three and four years of age, when the glands of the neck were in a state of suppuration, half a grain twice a day was given, and at the end of six weeks the swellings were entirely removed, and the general health much improved.—*Medical Times, July* 29, 1843, p. 288.

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10. *Vomiting a Cure for Phthisis.*—It is stated that 176 patients under consumption, 47 in the incipient, and 129 in the advanced stage, admitted during a period of four years into the military hospital at Capua, were ultimately discharged perfectly cured, their treatment having consisted in the administration of a table-spoonful night and morning, of the following mixture:—Tartarized antimony, three grains; syrup of cloves, an ounce; decoction of marsh mallows, six ounces; mix. The dose was to be repeated until vomiting ensued.—*Braithwaite's Retrospect*, from *Annali Univ. di Medicine.—Lancet, July* 22.

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11. *Mercurial Cigars.*—M. Paul Barnard lately proposed to the Acad. de la Medicine, the use of cigars impregnated with a weak solution of bichloride of mercury for persons affected with syphilitic affections of the throat and palate, as a mode of conveying mercurial fumigation. It has been proposed first to deprive the tobacco of its narcotine by frequent washings.—*Lancet, May* 22.

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12. *Advantage of Medicines in a Liquid Form.*—It has been found that fifteen grains of sulphate of quinine, given in infusion of senna, is more efficacious as a tonic, notwithstanding the purgative quality of the mixture, than twenty-four grains of sulphate of quinine administered in the form of pills. Panizza supposes the causes of this to be that the senna, by promoting the peristaltic action of the alimentary tube, and augmenting the secretion of the bowels, excites the production of a fluid adapted perfectly to dissolve the quinine; and that the quinine, in passing through the intestine in a state of solution, is placed in contact with a much larger extent of surface, and disposed for absorption much more rapidly than if taken in a solid form.—*Panizza, in L'Experience.* —*Lancet, Nov.* 4.

PATHOLOGICAL, THERAPEUTICAL, AND OPERATIVE SURGERY.

13. *On Punctures of the Eye.*—By M. Guepin.—M. D., an architect, brought his son to M. Guépin, in 1843. A minute fragment of iron had entered his eye, reaching from the cornea to the capsule of the crystalline lens, and almost touching the iris. It was impossible to grasp the fragment, and an incision would have been difficult, as it lay upon the upper edge of the pupil. M. Guépin accordingly devised the following remedy. He prescribed a collyrium made with distilled water and acetic acid, being persuaded that if the fragment became oxidized at its corneal extremity, the oxidation would spread over its whole surface, and that the dissolution and absorption of the fragment would follow. The event justified his supposition. At the end of three weeks, the cure was complete, with the exception of an almost imperceptible white point upon the capsule, and a very slight cicatrix on the cornea. In another case, the same collyrium was again used with success to carry off the oxide of iron left in the substance of the cornea by a fragment of iron which had remained in it a considerable time.—*Medical Gazette*, from the *Annales d'Oculistique.*

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14. *Cases of Carcinoma of the Thyroid Gland.* By Cæsar Hawkins, Esq., Surgeon to St. George's Hospital.—The author began by adverting to the common opinion that malignant tumor rarely commences in the thyroid gland, and stated his belief that this body is more frequently the seat of primary scirrhus than is usually supposed. In confirmation of this view, he related, in the first place, a case which was under his care in 1837, where the tumor appeared to be of that nature, but in which he had not the opportunity of making a *post-mortem* examination to verify his diagnosis; and he then alluded to four other cases which had come under his observation. He remarked that the age of the patient, when the disease commenced, was from 45 to 65; at which period of life ordinary bronchocele very seldom takes place, and the tumors most likely to present themselves, are the serous tumors, developed in or near the thyroid gland, or the cartilaginous or osseous degenerations, lately described by the term *enchondroma.* Having pointed out the diagnostic marks by which these tumors may be distinguished, and dwelt on the chief characters of carcinoma affecting the gland, he proceeded to relate the particulars of a case recently under his care in St. George's Hospital; his description being illustrated by colored drawings, made during the life of the patient, and from the morbid parts found in dissection, and by preparations.

Without following the author through the details of the case, it may be mentioned that the tumor which extended on both sides from the thyroid gland, was found to have attained a large size, and the parts adjacent to the larynx and œsophagus were involved in its texture, which presented the usual appearance of true scirrhus. A large ulcer opened on the surface of the œsophagus where the tumor adhered to that tube; and another ulcerated opening led into the trachea, immediately below the cricoid cartilage. The right internal jugular vein was closely adherent to the tumor, its coats having been absorbed at one part, and a small portion of the morbid structure having projected into its interior. The pneumogastric nerve was much flattened, and its fibrils were separated, so as to present a plexiform appearance; the carotid artery was deeply imbedded in the tumor. In describing the thyroid gland, the author observed that this body had nearly disappeared, the only part remaining being a small portion of the left lobe, intimately joined to the tumor, so as to show that they were originally parts of the same body; and there was a complete line of demarcation between the two structures.—*Royal Med. Chir. Soc.*, from *Med. Gaz.*

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15. *On the Cause of the occasional presence of Spermatoza in the fluid drawn from the sac of common hydrocele of the tunica vaginalis.* By John Dalrymple, Esq., Surgeon to the London Ophthalmic Hospital.—The author commenced by referring briefly to the cases published in the last volume of the Society's Transactions, where spermatoza were found in the fluid drawn both from encysted and from common hydrocele. According to his own observations,

these bodies are generally much less numerous in the latter than in the former kind of the disease, and the explanation which he offered of the mode in which they become mingled with the fluid of common hydrocele, when evacuated by the trocar, was the following. He quoted the authority of Scarpa to show that when the tunica vaginalis becomes distended with fluid, the different vessels of the spermatic cord are separated from each other to a greater or less distance, owing to the gradual expansion of the membranes, and the epidydimis and vas deferens are consequently removed out of their natural places in reference to the body of the testicle. He likewise presented to the Society a preparation, with a drawing, of a hydrocele, in which that condition of the tubes of the testis was exhibited. The testicle was situated at the posterior and inferior part of the sac, and somewhat internally: the vascular cord was seen running along the posterior wall, the vas deferens being about one inch distant from it, and to the outside; at the lower part of the sac, the vas deferens approached the testis, made a few large coils, from which commenced the lower head of the epidydimis; as this body ascended again, it was seen to be separated to the distance of an inch and a half from the testis, and to lie on the lateral aspect of the sac. Above the testis, the position of parts was as follows:—The vascular cord at the most posterior part of the sac; the vas deferens next to it, but distant about half an inch; and, lastly, the epidydimis, still more external, and anterior to the vas deferens. At the upper part, the epidydimis suddenly crossed the vas deferens, and descended in a curved line towards the body of the testicle, in which it finally merged.

The author concluded by expressing his opinion, that in cases of common hydrocele, the epidydimis and vas deferens are placed by no means out of danger of being punctured by the trocar, in the operation of tapping; and added, that the wounding of even a single tube, might well afford the few spermatoza found in the specimen of fluid referred to above, the more especially when we remember the squeezing often made to evacuate the last few drachms of the contained fluid.—*Ibid.*, from *London Medical Gazette.*

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16. *Luxation of the Knee forward*—A man about 40 years of age was admitted into the *Hôpital Beaujon*, upon the anterior part of whose thigh, a barrel of wine had fallen, and rolled over him; the knee-joint experienced a violent shock, and the condyles of the femur were thrown backward, while the tibia remained in front and was pushed up so as to overlap the femur. This was his condition when brought to the hospital. The young men on duty had no difficulty in recognizing a complete luxation of the tibia forward; the form of the knee was rounded, and the patella was in a line parallel with the anterior face of the femur. The luxation was reduced without difficulty; the limb was kept perfectly still during six weeks; and at the expiration of this time, he was able to move it a little, although the articulation still remained feeble. After the first two days, there was no pain in the articulation.

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17. *Curious Malformation connected with Congenital Imperforate Anus.*—A female child, two days old, was brought to the Hôpital Saint-Louis to be operated on by M. Boyer, for an imperforate anus. There was no external sign of an orifice in the region of the anus; the abdomen was tympanitic and painful. M. Boyer made a small incision in front of the coccyx, and examined carefully with the end of the finger, the bottom of the wound. Finding a fluctuating tumor, he, without hesitation, inserted into it a *trois quarts*, when the escape of stercorateous matter in a liquid state, led to the supposition that the instrument had penetrated into the intestine; the abdomen decreased in size, and for a short time everything progressed favorably. Peritonitis, however, ensued, and the child died.

Necropsy revealed the following condition of things:—The rectum termi-

nated in a pointed *cul-de-sac*, immediately behind the bladder, and it seemed as though it had been tied with a ligature; it contained hardened fecal matter, and its cavity communicated by two very small openings, the one with the bladder, and the other with two distinct sacciform bodies, placed on each side of the bladder. These two sacs were about the size and shape of the thumb of an adult; each one was found, on a close examination, to consist of a uterus and vagina; and these two uteri and vaginæ, situated on each side of the bladder, received, as through a conical filter, the liquid portions of the matter contained in the intestine. It was into one of them that the *trois quarts* was found to have penetrated.

OBSTETRICS AND DISEASES OF FEMALES.

18.—*Treatment of Puerperal Diarrhœa by Diacetate of Lead.*—By W. S. Oke, M.D., Southampton.—[Dr. Oke relates two cases of inflammation of the mucous membrane of the bowel occurring soon after parturition, in which the most obstinate diarrhœa was continued, in one case to a fatal termination, and in another for some time, notwithstanding the usual routine of practice by calomel and opium, catechu, morphia, leeches to the tender abdomen, fomentations, &c. The diarrhœa was frequent and exhausting, the stools were foul and thickened with slimy mucus, countenance anxious, eyes sunk, pulse 140, and the patient sleepless. The diacetate of lead combined with opium was now commenced.]

A grain of the diacetate and a grain of opium were immediately given, and the same dose repeated every two hours whilst the diarrhœa required it; at the same time, the cretaceous mixture was to be given after every liquid stool, as before.

This treatment soon produced the happiest effect. From the moment the diacetate of lead was taken, the diarrhœa gradually subsided; her sleep returned, and in forty-eight hours the pulse fell from 130 to about 96 in the minute. The dose of the diacetate and opium was of course diminished, and the intervals of giving it protracted as the symptoms yielded to its use; in short, under the saturnine treatment she completely recovered. When diarrhœa, as the result of ulceration of the mucous coat of the intestines, begins to take place, I know of no symptom more uncontrollable by any mode of treatment that had hitherto been adopted. It is singular that certain preparations of mercury, combined with opium, so beneficial in ordinary cases of diarrhœa, and also in some cases of cholera, should so completely fail in diarrhœa associated with denudation of the villous coat of the intestines. A young man, a butcher by trade, had a long-continued diarrhœa of fæcal matter, mingled with sanies. There was no organic stricture that could be detected. As every possible means had been tried in vain, I resolved to bring the system under the action of mercury, in the hope of causing the ulceration to heal. Accordingly, by means of the blue pill combined with opium, he was kept in a state of ptyalism for a considerable time, but it had not the slightest effect on the disease.

My attention was drawn to the efficacy of the diacetate of lead in diarrhœa by Dr. Graves' excellent work on Clinical Medicine, and it appears that his attention to it had been awakened by Dr. Bardsley of Manchester. Dr. Graves, after having lost all confidence in calomel for the cure of epidemic cholera, thus writes (page 697): "It was, however, a question of deep anxiety to me what I should select instead, or to what article in the materia medica I should have recourse, when so many had proved so utterly valueless. About this period I happened to be called on to attend a case of obstinate diarrhœa, with my friend Dr. Hunt. The case was an extremely harassing one, and had resisted all the ordinary remedies. I advised the use of the acetate of lead and opium in full doses; this was given, and I had the satisfaction of finding that the diarrhœa soon yielded. Before this period I had received a letter from that able practitioner and excellent man, Dr. Bardsley of Manchester, directing my attention

to the use of acetate of lead in large doses in that form of diarrhœa which precedes and accompanies inflammation of the glands of the small intestines."

The result of the second case above related—and a *very strong case it is*—enables me to bear testimony that the diacetate of lead is also an effectual remedy in acute puerperal villitis, associated with diarrhœa, and a pulse of 130 in a minute—a disease which no other remedy could combat, and which, in all human probability, would soon have destroyed the patient.—*Braithwaite's Retrospect*, from *Prov. Medical Journal, Sept.* 23, 1843, *p.* 524.

19.—*Neuralgia of the Urethra.*—A woman, thirty-two years of age, mother of four children, suffered for eight months from pain at the lower part of the abdomen, with scalding on making water, and a constant sense of titillation at the orifice of the meatus. The pain became so severe as to prevent the patient from sleeping. The bladder was examined, but no sign of calculus found. Various remedies were tried without effect. Two issues, with the Vienna caustic, were now made over the hypogastric region. The patient had tepid baths, containing two drachms of the sulphate of potass, and some pills composed of hyosciamus and extract of lettuce. This mode of treatment effected a cure.—*Prov. Med. Jour., June* 3, 1843, *p.* 201.

TOXICOLOGY AND MEDICAL JURISPRUDENCE.

20. *Hydrated Peroxide of Iron in Poisoning by Arsenic.*—To a young woman, supposed to have swallowed about five drachms of white arsenic, one grain and a half of tartar emetic was given, and a clyster with three ounces of olive oil. After one minute, vomiting took place, of a greenish liquid and a little blood, in which arsenious acid was detected. Immediately the hydrated peroxide of iron, in a large dose, was commenced, and continued for several hours till 2½ pounds of it had been taken. After each dose renewed vomitings occurred, by which all the poison seems to have been dislodged. In the evening the use of an emolliant ptisan, containing some nitre, was followed by a copious stool and an abundant diuresis. The hydrated peroxide was continued, and in eight days the patient was convalescent.—*Gaz. des Hôpitaux*, Aug. 15.

21. *Symptoms produced by different Narcotics.*—By M. Eitner.—Belladonna, besides its narcotic effect, is productive of furious delirium and great congestion in the brain. Hemlock and henbane have rather a soporific than a narcotic power, but they produce cerebral congestion and convulsions. Stramonium excites a scarlatinous redness of the skin, and excitement of the genital organs with salacity. Nux vomica and strychnine bring on epileptic convulsions, and a peculiar rigidity of the extremities, symptoms lasting till a sudden prostration takes place. Alcoholic drinks produce lethargy with spasms, but no strikingly marked congestion. Opium and morphine cause slight delirium, which soon gives way to supineness; face ruddy, and extremities cool; pulse weak and tremulous; constipation, or else involuntary evacuations. Tobacco causes a state of asphyxia and syncope, paralysis and relaxation of the limbs, and involuntary evacuations. Poisonous fungi, with a true narcotic effect, make the extremities cold, and cause constipation; abdomen inflated and painful; pupils contracted. Prussic acid, bitter almonds, &c., induce a state of asphyxia and paralysis, and if death be not immediate, a soporific state, with congestion in the brain.—*Amer. Jour. of Med. Sci.* from *Medicinische Zeitung. Encyclographie de Sciences Médicales*, May, 1843. T. R. B.

22. *Toxicological effects of Sulphate of Quinine.*—By M. Melier.—M. Melier read a memoir to the Academy of Sciences, in which he gave an account of some experiments of Magendie, on the effects of poisonous doses of sulphate of quinine. Dogs were poisoned with this substance, and on dissection, distinct fluidity of the blood was observed, and morbid engorgement of the parenchyma of the lungs. M. Melier, therefore, cautions against administering the large doses that it has been the practice of late to do.—*Ibid.*, from *Comptes Rendus.* T. R. B.

MISCELLANEA.

23.—*Artesian Wells.*—A new feature in hygiene and domestic and rural economy is gradually exhibiting itself in the Artesian wells. In Westphalia, writes M. Humboldt to the Paris Academy of Sciences, it is intended to bore to a depth of 2000 metres (a mile and a quarter English), and at that depth, it is supposed that the water will be of the great heat of 70° centigrade (158° F.). The borers have reached a depth of 622 metres. It is the intention of the French government to make an Artesian well in the *Jardin des Plantes* of a depth of 900 metres, which will, it is supposed, furnish water at an elevated temperature, to be appropriated to heating hot-houses of the gardens, supplying the contiguous hospitals of La Pitié and La Salpetrière for baths, washing, &c., and thus effecting a great economy in fuel.—*Bulletin of Medical Science, December*, 1843.

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24. *Microscopic Examination of the Tartar of the Teeth.*—Hitherto this calcareous incrustation has always been regarded as a mere inorganic deposit from the saliva; but M. *Mandl* has been led, by his recent observations, to adopt a very different opinion respecting it. According to this gentleman, the tartar of the teeth is almost entirely composed of the skeletons or cases of infusory animalculæ, agglutinated together by dried mucus; just as certain soils (so says the great German microscopic naturalist, *Ehrenberg*) consist of fossil Infusoria.

If a portion of the mucosity, which is adherent to the teeth, be mixed with a little water and heated, and then subjected to microscopic inspection, it will be found to exhibit a number of infusory animalculæ, which are in active motion. Their shape is identical with that of the animalculæ known by the name of *Vibrio*. The presence of living Infusoria in mucosities was known to *Leuwenhock;* but the fact seems to have been forgotten, until revived by M. *Mandl*. Having satisfied himself that they exist in the mucosities of the mouth, he set himself to ascertain whether they contributed to the formation of the tartar of the teeth; and he was not long in discovering that this substance chiefly, if not entirely, consists of dead *vibrios* cemented together by dried mucus. From this circumstance, may we not infer that these animalculæ are provided with an inorganic calcareous covering to their bodies?

It may be useful here to state that, according to the analysis of M. *Vauquelin*, the tartar of the teeth consists, in the 100 parts, of 66 of phosphate of lime, 9 of the carbonate, 14 of animal matter, and 3 of oxide of iron and phosphate of magnesia.—*Medico-Chirurgical Review, for January*, 1844.

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25.—*Election of Officers of the Royal Academy of Medicine of Paris.*—At the last annual meeting of this Society, the following gentlemen were chosen officers for the year 1844:

Monsieur Ferrus,	President.
" Caventon,	Vice President.
" Dubois d'Armiens,	Secretary.
Messrs. Louis, Paul Dubois, and Londe,	Members of the Council.

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26.—*Prize Essay of the Royal Academy of Medicine of Paris.*—This institution has awarded to Monsieur Valleix, the Prize of 1500 francs proposed by it last year for the author of the best memoir on the following subject—"To examine into the causes of Œdematus Laryngeal angina (œdema of the glottis); to indicate its progress, successive symptoms, and differential diagnosis; and to discuss the advantages and disadvantages attending the operation of Tracheotomy, as applied to such cases."

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27.—Abraham Colles, M.D., of Dublin, well-known as one of the patriarchs of the Medical profession, has recently closed his earthly career.

2.

American Medical Intelligence.

CERATOPLASTICE IN MAN.

Mr. Editor:—In the fall of 1838, I performed the operation of "Keratoplasty" on the eye of James Dunn, in the presence of Drs. J. C. Paul, Wm. C. Roberts, J. B. Kissam, and P. Pratt; and the case was subsequently seen by Dr. Edward Delafield. But for the hope of repeating and confirming the operation, I should have communicated it at an earlier date. I now send it to your Journal for the purpose of placing it upon record.

Very truly, yours,

New York, Feb. 13, 1844. Richard S. Kissam.

James Dunn, æt. 35, an Irishman of good constitution, having one eye entirely destroyed, and the other presenting a staphyloma with adhering iris, capable of distinguishing only a very bright light, presented himself for relief.

About this time I had seen the account of Mr. Bigger's experiments of transplanting the cornea of one rabbit to the eye of another, with success, and I determined to give the patient the only chance that presented itself, that of transplanting a new cornea to the seat of his opaque one.

Having obtained a pig about six months old, I prepared for the operation. I provided myself with several curved needles of the smallest possible size, and with Beer's cataract-knife.

The patient was placed on his back, on a table. I then attempted to remove the cornea from the animal; but in this I was foiled, as the pig had the power of retracting the eye within the orbit.

Then it was determined to extract the eye from the socket, which was done, and a piece of cornea half as large as the thumb nail was cut out and placed upon the end of a piece of cork, and two ligatures passed through it at opposite sides.

Now, with Beer's cataract-knife, I removed the necessary portion of the protruding cornea of my patient, and to my great regret found the vitreous humor in a very fluid state, so that great caution was necessary to prevent its evacuation.

The cornea from the animal appeared more like cobweb than any other material, but it was carefully *laid over* the aperture in my patient's eye, and secured by the two ligatures on a line with the angle of the tarsi. The ligatures were now cut short, and the lids carefully closed.

After twenty-four hours, I discovered, on separating the lids, a violent chemosis, which, in twelve hours more, had so much subsided as to allow me to remove the ligatures, when I was both surprised and delighted to find the transplanted cornea had united with the patient's, and of believing myself the first who had succeeded in this operation on the humun eye.

In the course of two or three days the inflammation diminished, and now were clearly revealed the wonderful powers of nature in adapting herself to contingencies.

The chemosis was so great that the raised conjunctiva served as a cushion to protect the transplanted cornea from irritation of the moving tarsi; but more important still, it over-lapped the added cornea, so that like surface was applied to like surface, and then united. It will be remembered that the cornea of the animal was laid *over* that of my patient, and thus the internal surface of the transplanted cornea was applied to the external surface of the patient's, placing unlike surfaces in contact, which are not disposed to unite.

From the delicacy of the parts, it would be utterly impracticable to *fit* in an aperture, a piece of foreign substance equally delicate.

The vision, *immediately* after the operation, was improved, inasmuch as an increased quantity of light was admitted through the new transparent cornea; the light was of all the colors of the rainbow, being decomposed by passing through the diseased humor of the globe. The cornea continued transparent a fortnight, when it commenced to become opaque; and in the course of a month it was absorbed.

I believe that had the internal structure of the eye been perfect, no absorption would have occurred, because what is necessary is generally preserved; unnecessary parts nature does not long preserve. The transplanted cornea was worse than useless, because, though it transmitted light, the light was decomposed, and was of no benefit to vision.

After the absorption of the new cornea, the remains of the old one contracted upon itself, thus materially improving the appearance and comfort of the patient, the irritation of the protruded staphylomatous cornea being removed.

To those who shall attempt repeating this operation, I would say, place your sutures above and below, and not at the sides, as the sharp edge of the lower tarsus was a source of disturbance, inasmuch as it engaged in its movements the new cornea, and lifted it up. This I was obliged to remedy by passing a ligature through the integuments near its edge, thus securely drawing it down so as to prevent motion.

Note to Dr. Roberts' Pyretological Inquiries.—While the sheets of this article are passing through the press, we had occasion to examine the Lecture of Drs. Armstrong and Watson, the latter recently published, and one of the most practically useful books that ever was presented to the student. There are in both these volumes some coincidences of opinion with those published in our Inquiries which we desire to notice. Dr. Armstrong was once a strong believer in the contagiousness of typhus; but of later years changed his sentiments, and, in the work before us maintains with plausibility, energy, and eloquence the idea of its infectious nature. He died in the belief that "what is now commonly called typhus fever, arises from malaria, or marsh effluvia; and he evidently considers that intermittent, remittent, and continued fevers arise from the same cause, *and are the same disease* with certain modifications. He states that he saw a case which began as intermittent, became remittent, and ended as typhus of high malignity.—(Lect., p. 435.) He speaks of intermittent, and remittent typhus.—(V. Inquiries.) Dr. Armstrong notices the fact that typhus arises in *single cases*, at the same time, in places remote from each other, and explains them by local malarious infection. These are the cases we have alluded to upon p. — of our Inquiries, and have there attempted to account for, but not in this mode, which is another and a possible way of explanation. He coincides with Dr. Southwood Smith (v. Inquiries, p. 182) in saying "that intermittent fever puts on the remittent type, when slight inflammation occurs; and the continued character when it is higher and more extended."—(Lect., p. 457, Am. ed., 1837.) This idea refers the character of the fever to the intensity of the local lesion, and leaves out of view the intensity of the poison, both in inducing those lesions and in influencing the type of the disease. Plague and yellow fever, Dr. Armstrong considers as modifications of typhus.—(472.) We refer the reader for a general similarity of views to p. 182 of this volume, line 13th et passim. Dr. Armstrong denies the existence of a fever *sui generis* with puerperal state, considering such cases to be either, in his own language, common inflammatory fevers (inflammations), or specific fevers (typhus), occurring in that state; by accident occurring in the one case, in the other by malarial influences, as at any other time, but with certain necessary modifications, and not contagious. The reader is requested to compare this statement (Lect., p. 511) with the note on page 182 of this Journal. The work of Dr. Armstrong is the production of a genius. That of Dr. Watson, of a scholar; both are eminently practical and interesting from their style, which is familiar; but the latter is the safer guide, and more in accordance with existing doctrines. "There is," says Dr. Watson, "*but one species of continued fever*, although there are

many varieties.—(P. 836, Lect. on the Principles and Practice of Phys., Philadelphia, 1844.) (V. note on p. 185 of the Inquiries.) "All analogy," says Dr. Watson, is in favor of the primary change being wrought *on the blood itself.* Dr. Watson is "sure that it is an error to suppose, with some pathologists, that fever is essentially nothing else than inflammation of the glands of Peyer" (844), and has seen *many cases* when continued fever has occurred without any trace of a morbid action having gone on in the mucous follicles; but although not the essence, it is a very frequent companion of continued fever. "The synochus of Cullen, is," according to him, "the most usual variety of continued fever;" and, from page 846, line 8th, he evidently does *not* believe that typhus and the typhoid fever are distinct diseases. He considers the disease *contagious*, using the term in its proper sense, as a communicable animal poison. He acknowledges that it is presumable, that it may originate from other causes than contagion; as even those diseases which have no other known cause; but says that it is not easy to be sure that in some way or other, contagion has not acted.—(P. 851.) Such are the sporadic causes to which we have alluded. "I confess," says he, "my own opinion to be that continued fevers originate, in all cases, from specific contagion, like the exanthemata. *With respect to all these diseases, I conceive that in every large community, there is constantly kept up a sufficient stock of contagious matter, to act as a sort of leaven, whenever circumstances favorable to the development of the disease may arise.*"—(851.) Dr. Watson does not think that continued fever may be generated from the effluvium of crowded healthy human bodies, but from the putrefaction of dead organic matter, relying on Dr. Bancroft's investigations for the truth of this opinion, in which we, as appears from our essay, do not coincide. These are considered by Dr. Watson, with cold, &c., as predisposing causes only, and certainly if typhus is considered as an exanthema, which is highly probable, and we believe that all such originate in a specific contagion, which is true as far as we know, such a conclusion inevitably follows. But this is a point which needs further investigation. Either Dr. Watson is correct, or typhus differs in this from the exanthemata, that it has two modes of origin, or the exanthemata are capable of spontaneous origination independently of contagion. In the first of these events, what becomes of the theory of the paludal, malarious, or infectious origin of typhus, so generally acknowledged, and seemingly so well demonstrated. In the second, the analogy of typhus with the eruptive fevers is materially interrupted. The subject is manifestly one of extreme interest. Puerperal fever, Dr. Watson appears to consider, with Ferguson, as always induced by a cause within the body of the patient, as by contagion, and does not allude to its connection with typhus. The reader will not fail to observe many striking coincidences between the statements now quoted from the two authors named, and the passages in our Inquiries with which we have compared them. By Professor Dunglison, it is said, page 566, volume II., Practice of Medicine, Phil., 1842, that Louis now admits without hesitation, *the contagious nature of his typhoid fever.* This note could not be prepared in time to be appended to the article itself, and we are indebted to the kind permission of the editor for introducing it here.

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Medical Schools and their Classes.—It appears from the several catalogues received by us, that the attendance of students the present winter, at the various Medical Colleges, has been unusually large. At Philadelphia, the classes, they say, are larger than at any former season. The catalogue of Jefferson College gives a total of 341, and the University of Pennsylvania claims more than her average number. At Boston, Albany, Geneva, New Haven, Castleton, Bowdoin, Louisville, Lexington, Cincinnati, and our own city, we learn that all have augmented numbers. This result is probably due to the circumstance of the pecuniary distress which has prevailed for the last few years, but which now fortunately has been succeeded by more prosperous times.

In the Medical Examiner of January 27th, we are told that the means

of *Clinical Instruction* afforded by Philadelphia, are exceeded only by Paris and London. The editor, who is also a professor, exclaims in glowing language—"*as 'the metropolis of medical science' on the American Continent, it is incumbent on her to be foremost in the march of improvement.*" Now, as we are ourselves a native of Pennsylvania and a graduate of Philadelphia, we are at no loss in appreciating this modest praise; but we would, at the same time, invite this Professor of our Alma Mater, who did not, however, hold that honorable position in our day of pupilage, to make a visit to the *commercial*, if not the *medical*, metropolis.

It would afford us no small gratification to be the medium of showing him the onward march of medical science in the city of New York. The time has now come when this metropolis of the Union must take the first rank as well in medicine as in commerce, among the cities of the New World. The foundation is firmly laid in the multitude of highly educated physicians who now adorn our profession, and in the ability and emulation with which our two medical schools are conducted. An impulse has been given within a brief period, to medical education in the city of New York, which has sprung from sources that nothing can impair, but which are perpetually multiplying in an augmented ratio. Of that ratio, and of its prospective increase, some conception may be formed by the fact, that in 1840 there were in attendance on the medical lectures, 101 students, and that, at the present session of the two schools, the number exceeds 500. Of these, 325 are attached to the Medical Department of the University, now in the third year of its existence, while the College of Physicians and Surgeons has perhaps doubled its numbers within the same period. Its catalogue for 1843–4 numbers 182 students, exclusive of 30 gentlemen engaged mostly in practical anatomy, whose names are not published, because, in consequence of being graduates of the College and for other reasons, they were not allowed to matriculate.

The resources of the city are in full development. Its population already reaches 400,000. Its anatomical opportunities are so vast that it furnishes supplies to the medical schools from Maine to New Orleans. Its Hospitals, and Dispensaries, and Eye-Infirmary, and other charities, are on a scale commensurate with the wants of the largest medical institutions; and clinical instruction is given daily to a large concourse of students from both schools, at the Hospital in Broadway, by its eminent physicians and surgeons. Each school has also a *clinique* of its own; and, at the University College, this instruction is delivered by Professor Mott throughout the year; by whom, also, as well as by the surgeons of the Hospital, operations are constantly performed in presence of the students. An *obstetric clinique* has been also in progress, under the superintendence of the Professor of Midwifery, at which more than 600 cases of labor have been attended by the students of the University School, during its first two and present sessions. At the College of Physicians and Surgeons, arrangements also exist to supply the elder students with cases, by which they may become familiar with the details of obstetrical practice; and here, likewise, is a surgical clinique, under the care of that excellent operator, Prof. Parker.

Besides, we have two spring courses of lectures; the one, the Hospital School of Medicine, consisting of Drs. Post, Buck, Watson, Swett, and Griscom; and the other course is given by an association of gentlemen, who are connected with different medical institutions of the city,

viz., Drs. Bulkley, Clarke, Gilman, McCready, Parker, Quackenboss, Roberts, Watts, and Wilkes.

To such exertions, a grateful public owe, at least, a passing tribute of its thanks; nor can we permit ourselves to believe that this unexampled success in the history of medicine will not excite the admiration of the world, increase its respect for the literature of our Union, give origin and impulse to other literary enterprises, raise emulation among its kindred institutions, animate the profession with a zeal for medical learning, and secure for so much enterprise the substantial reward of a class of some 600 or 700 students at the next following session.

The Sydenham Society.—It is with much satisfaction that we can introduce to our readers the project advanced in the subjoined advertisement, which addresses itself in the most inviting language, to every medical man who has at heart the good of his profession:

"The subscriber, having been appointed "*Local Secretary to the Sydenham Society,*" of London (Sir Henry Halford, F.R.S., President), for the city of New York, and the neighboring States, would take this method of informing the profession, that this Society has been instituted for the purpose of meeting certain acknowledged deficiencies in existing means for diffusing medical literature, which are not likely to be supplied by the efforts of individuals; which objects it designs to carry into effect, by a succession of cheap publications, embracing, among others—1. Reprints of Standard English Works, which are rare or expensive; 2. Miscellaneous Selections from the Ancient and from the earlier Modern Authors, reprinted or translated; 3. Digests of the works of old and voluminous authors, British and Foreign, with occasional Biographical and Bibliographical Notices; 4. Translations of the Greek and Latin medical authors, and of works in the Arabic and other Eastern Tongues, accompanied, when it is thought desirable, by the original Text; 5. Translations of recent foreign and original works of merit, which might prove valuable as books of reference, but which would not otherwise be published, from the slender chance of their meeting with a remunerating sale—such as Bibliographies, alphabetical and digested Indices to voluminous periodical publications, &c.

"The following works are in course of publication, and may speedily be expected: 1. A complete edition of *Sydenham's Works*, in Latin. Edited by Dr. Greenhill, of Oxford. 2. A complete edition of '*Hecher's Histories of the Epidemics of the Middle Ages;*' with a Prefatory Notice and an Appendix by the author. Translated from the German and edited by B. G. Babington, M. D., F.R.S. 3. The first volume of Hasse's '*System of Pathological Anatomy.*' Translated from the German, and edited by Dr. Swaine and Alexander Ure, Esq.

"The subscription is *Five Dollars*, annually. For this sum, the above works are promised for the present year, and perhaps one or more of the following (depending, however, on the number of subscribers—at present amounting to 1200). 1. The Medical Works of *Paulus Egineta.* Translated and edited by Francis Adams, Esq. With a Commentary, comprising a complete view of the knowledge possessed by the Greeks, Romans and Arabians, on all subjects connected with medicine and surgery. 2. The complete works of *Hewson.* 3. An edition, in English, of *Sydenham's Works.* 4. A complete edition, in English, of the works of *Harvey.* 5. A translation from the German, of *Schwann's Work*, on the '*Intimate Structure of Animals and Vegetables.*'

"From the plan of publication, it is presumed that the English copies will come at a lower price than even American reprints of the same, should they be reprinted. By a rule of the Society, its publications will only be supplied to subscribers; no copies being furnished to booksellers, either in Great Britain or America. Book-clubs will not be allowed to subscribe to the Society as members; but those Societies and Institutions which have *permanent* libraries, may

subscribe to the Society in the name of their President, Secretary, or Librarian. Subscriptions, payable in advance ($5,00) *postage paid*, to

CHARLES A. LEE, M.D.

New York, Jan. 30, 1844.

"P. S. Among the '*Council*' of the Society, are Drs. Forbes, Pereira, Copland, Guy, Babington, Solly, Wilson, Farre, Philips, Anceil, Sharpey, Ure, &c. &c.; and among the *Vice Presidents* of the Association, are Drs. Abercrombie and Alison, of Edinburgh; Sir Benjamin C. Brodie, Sir James Clark, Henry Holland, M.D., Benjamin Travers, F.R.S., Sir James McGregor; Drs. Graves and Sir Philip Crampton, of Dublin; Dr. Kidd, of Oxford, &c. &c. C. A. L."

As the list of members already exceed in number, 1400, the Society, feeling itself authorized to carry its object into immediate effect, has now two works in press, which, it is expected, will very soon appear.

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The Automaton with Articulated Voice.—We have had the pleasure of examining privately this *chef-d'œuvre* of human ingenuity—the result of eighteen years' unceasing labor, by a German, named Faber. It is constructed upon the model of the human organs of voice, the tongue, larynx, &c., being made of caoutchouc. As voice is the sound produced by air driven from the lungs through the larynx, causing a vibration of the chordæ vocales, it is a function of *animal* life; but this function, in animals inferior to man, as well as in the idiot, is limited to the production of the *simple* or *instinctive* voice; while, in intellectual man, it becomes sufficiently complicated for the purpose of articulation. This is regarded as an evidence of man's intellectual superiority. Here, however, we find the same phenomena produced by an apparatus of caoutchouc and a bellows!

The automaton is represented by a bearded Turk, and the articulations are produced by playing upon sixteen keys. We were quite surprised at being addressed by the automaton, in words very distinctly articulated, thus: "Wel-come Doc-tor For-ry." "Please ex-cuse my slow e-nunci-a-tion." After giving various other illustrations of his vocal powers, the automaton sang "Hail Columbia, &c.;" as we were about leaving, he said, "Gen-tle-men, I thank you for your vis-it."

But, after all, *cui est bono?*

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Capsules of Cod-Liver Oil.—We have been shown by Mr. Milhau, at his pharmacy, 183 Broadway, beautiful capsules of cod-liver oil, prepared by Mr. W. F. Stone, by means of which the unpleasant taste of this medicine is wholly obviated. Each capsule contains, besides the cod-liver oil, one-twentieth grain of iodine. This oil is a remedy which has recently come into notice, as shown in some of our previous numbers; and, in Germany, it is regarded almost as a panacea.

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The Medical Examiner.—The editorial chair of this Journal has changed occupants. The seat, so honorably filled by Meredith Clymer, M. D., is now in the possession of Robert M. Huston, M.D., who enters upon this new duty with the favorable prepossessions of his professional brethren.

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Richard S. Kissam, M. D., of this city, has been chosen Professor of the Principles and Practice of Surgery in the school at Castleton, Vermont.

The American Journal of Science and Arts: Conducted by Professor Silliman and B. Silliman, Jr., of Yale College.—This Journal, which embraces in its plan, the entire circle of the Physical Sciences, and their application to the arts, has now reached its forty-sixth volume. Devoted to important national and universal interests, and having elicited, by prompting original American efforts, many valuable researches and discoveries, it is in this character known and accredited, both at home and abroad.

But alas! for American science, its subscription list has again become crippled, which seems to be a periodical infirmity, occurring at periods perhaps as far apart as the appearance of locusts. "At two former periods of exigency," say the Editors, "a frank disclosure was made to our subscribers and to the public, and we hesitate not to do it again, deeming it no personal humiliation, but an act of fidelity to the honor and the welfare of our country."

It behooves a medical man, if he wishes to maintain that position in educated society to which his profession gives him a claim, to keep pace with the progess of the collateral sciences; for medicine itself, as regards, for instance, the laws of mortality or the development or diffusion of diseases, is, strictly speaking, one of the branches of physical science. But this appeal is still more strongly made to the various military posts of our country, at each of which there is, already, either a small library or the nucleus of one. As respects the officers generally, the majority of whom are graduates of West Point, there is no periodical which can be more appropriately introduced.

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Charles A. Lee, M. D., of this city, has been appointed Professor of Materia Medica and General Pathology in Geneva Medical College, in place of Professor John Delamater, resigned.

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Meteorological Observations.—The Army Meteorological Register, we have the satisfaction of continuing in the present number. In our last, the observations on the barometer and the thermometer attached, were given by the French scale; but, on second-thought, the use of a foreign language in publishing the laws of climate, has appeared to us scarcely less exceptionable, than the use of the same language in publishing the laws of our legislators. Unfortunately, however, we did not discover, until too late to apply the proper remedy, that the French barometer alone has been reduced to the English scale. But this will be remedied hereafter.

We also here make a record of certain hourly observations on the barometer, taken simultaneously, at the suggestion of Sir John Herschel, at various points of the Earth's surface. These observations are thus directed to be taken at the military posts:

"Hourly observations of the barometer will be taken for 24 hours, at the equinoxes and solstices, to correspond with those already instituted at numerous points of Europe and America, at the suggestion of Sir John Herschel. The days fixed upon for these observations, are the 21st of March, June, September, and December. But should any one of those 21st days fall on Sunday, then the observations will be deferred till the next day, the 22d. The observations at each station will commence at 6 o'clock, A. M., of the appointed days, and be continued at the beginning of each hour till 6 o'clock, A. M., of the following days, care being taken to obtain the correct time."

HOURLY METEOROLOGICAL REGISTER.

STATION, *Fort Columbus, New York Harbor.* *Lat.* 40° 42′ *N.* *Long.* 74° 9′ *W.* *Alt. of Bar. above low water about* 25 *ft.*

DATE.	BAROMETER.	ATTACH'D THER.	DETACH'D THER.	CLEAR. OF SKY.	WIND.	CLOUDS.	WET BULB.
December 21, 1843.	Fahrenheit.	Centigrade.	Fahrenheit.				Fahrenheit.
6 A. M.	30·188	3½°	38½°	5	NW 2	NW 4	38°
7 "	30·192	4	39¼	8	NW 0	NW 0	38
8 "	30·228	4	39½	10	NW 0	0	37½
9 "	30·268	4	40	10	NW 0	0	38
10 "	30·268	5	40	10	NW 0	0	38
11 "	30·248	5½	42	10	NW 0	0	39
12 M.	30·248	6¼	44	10	SW 1	0	42
1 P. M.	30·308	7	45	10	SW 1	0	45
2 "	30·308	8	46	8	SW 1	0	42
3 "	30·304	9	44	6	SW 1	0	42
4 "	30·304	5½	42	0	SW 1	0	40
5 "	30·308	5	41¼	5	SW 2	SW 3	39
6 "	30·300	4½	41	5	SW 2	SW 1	39
7 "	30·280	4¼	41	0	SW 2	0	39
8 "	30·240	5	41	0	SW 2	0	40
9 "	30·240	6	40	0	S 1	0	42
10 "	30·240	5	40	0	SE 0	0	39
11 "	30·228	5	40	0	SE 0	0	39¼
12 "	30·232	5	40	0	SE 0	0	39
1 A. M.	30·224	5	40	0	SW 1	0	39
2 "	30·224	5	40	0	SW 1	0	39
3 "	30·216	5	40	0	SW 2	0	38
4 "	30·208	5	40	0	SW 2	0	38
5 "	30·184	4	41	0	SW 1	0	38
6 "	30·112	4½	42	0	SW 1	0	36
MEAN . . .	30·248	5·24	41·12	3·88			39.32

METEOROLOGICAL

STATION, Fort Columbus, New York Harbor. Latitude 40° 42′ North. Longitude 74° 9′ West. Altitude of Barome

1843.	BAROMETER.				THERMOMETER ATTACHED.				THERMOMETER DETACHED.					CLEARNESS OF THE SKY.				WI	
Decemb.	Sunrise.	9 A. M.	3 P. M.	9 P. M.	Sunrise.	9 A. M.	3 P. M.	9 P. M.	Sunrise.	9 A. M.	3 P. M.	9 P. M.	Daily Mean.	Sunrise.	9 A. M.	3 P. M.	9 P. M.	Sunrise.	9 A. M.
	Fahr.	Fahr.	Fahr.	Fahr.	Centi-grade.	Centi-grade.	Centi-grade.	Centi-grade.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.						
1	30·20	30·20	30·16	30·12	·5°	2°	3°	1°	30°	32°	34°	32°	32°	0	0	0	6	NE 1	NE 1
2	30·08	30·06	29·99	30·04	1	1	4	2	33	34	43	34	38	0	0	8	10	NE 1	NW 0
3	30·04	30·04	30·06	30·05	—2	1	6	2	32	34	44	35	38	10	10	10	10	NW 0	NW 1
4	30·08	30·07	30·10	30·08	—5	2	5	3·5	29	32	42	39	35·5	0	6	5	0	NW 1	NW 1
5	30·08	30·02	29·96	29·96	—3	3	3·5	3	36	37	44	32	40	5	5	5	10	NW 2	NW 6
6	29·98	29·96	30·20	30·20	—6	1	3	4	28	30	32	34	30	10	10	10	0	NW 0	NE 0
7	30·04	30·02	30 00	29·92	—4	3	1	3	33	34	32	32	32·5	0	0	0	4	SE 0	SE 0
8	29·77	29·92	29·92	29·88	—5	2	6	2	33	36	41	34	37	10	10	2	2	NW 1	NW 2
9	29·73	29·73	29·73	29·75	1	2	6	0	33	36	40	32	36·5	0	0	4	8	NW 0	NW 1
10	29·96	30·02	30·12	30·10	—5	3	8	·5	30	35	42	32	36	6	9	8	6	NW 3	NW 2
11	29·96	29·92	29·77	29·77	1	4	3	3	32	35	38	38	35	0	6	0	2	SW 1	SW 1
12	29·79	29.79	29·89	29·81	1	1·5	11	4	33	34	43	28	38	11	10	8	0	W 1	NW 0
13	30·31	30·43	30·67	30·61	—7	6·5	9	5	18	20	36	25	27	10	10	10	0	NW 1	NW 1
14	30·61	30·63	30·63	30·49	0	4·5	9	1	20	24	39	33	29·5	0	10	10	10	NW 0	NW 1
15	30·55	30·47	30·45	30·35	0	2	3	5	31	37	38	40	34·5	6	10	10	10	SW 1	W 0
16	30·35	30·33	30·20	30·20	3	3·5	4	4	37	39	40	40	38·5	0	0	0	0	NE 0	NE 1
17	30·04	30·02	30·00	29·98	2·5	3	4·5	4	36	38	39	37	37·5	0	0	0	0	NE 1	NE 1
18	30·00	30·08	30·00	30·00	2·5	2·5	3	3	36	36	38	36	37	0	0	0	0	E 2	E 1
19	30·00	30·08	30·30	30·31	2	3	3	2·5	35	36	36	34	35·5	4	5	4	0	NE 1	NE 1
20	30·23	30·23	30·19	30·07	2	5	9	4	34	38	46	40	40	10	10	10	0	NE 0	NE 2
21	30·19	30·27	30·30	30·25	3·5	4	9	6	38·5	40	44	40	41·25	5	10	6	0	NW 2	NW 0
22	30·11	30·04	30·01	29·99	4·5	4·5	5	5	42	40	40	40	41	0	0	0	0	SW 1	SW 1
23	29·90	29·99	29·99	29·94	3·5	3·5	3	2·5	38	38	36	34	37	0	0	0	0	NW 4	NW 2
24	30·00	30·03	30·02	30·00	3	3	3·5	3·5	34	36	38	38	36	0	4	8	0	NW 1	NW 1
25	30·03	30·07	30·07	30·07	3	3	8	5	34	38	44	38	39	10	10	8	10	NW 1	W 1
26	30·17	30·21	30·19	30·09	3·5	3 5	5	4	39	38	42	38	40·5	10	0	8	0	E 1	NE 1
27	29·95	29·97	29·93	29·92	2·5	3	9	5	35	36	46	41	40·5	0	10	10	10	NE 2	NE 4
28	29 91	29·92	29 88	29·90	3	3·5	5·5	4	38	39	42	37	40	10	8	0	0	SW 1	SW 1
29	29·85	29·80	29·79	29·79	2	3	3	—1	35	38	35	31	35	10	5	5	10	N 3	NW 2
30	29·79	29·80	29·78	29·72	—2	·5	2	1	28	30	31	31	29·5	10	10	10	10	NW 4	NW 4
31	29·77	29·76	29·76	29·85	0	1	1	2	30	34	34	30	32	10	10	6	10	NW 4	NW 4
Monthly Mean.	30·05	30·06	30·06	30·04	2·70	2·84	5·10	3·09	32·93	34·97	39·32	35·00	36·12	4·51	5·74	5·32	4·13		

METEOROLOGICA

or. Latitude 40° 42′ North. Longitude 74° 9′ West. Altitude of Bar

M.	THERMOMETER DETACHED.					CLEARNESS OF THE SKY.					
	Sunrise.	9 A. M.	3 P. M.	9 P. M.	Daily Mean.	Sunrise.	9 A. M.	3 P. M.	9 P. M.	Sunrise.	9 A
	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.						
	30°	32°	34°	32°	32°	0	0	0	6	NE 1	NE
	33	34	43	34	38	0	0	8	10	NE 1	NW
	32	34	44	35	38	10	10	10	10	NW 0	NW
5	29	32	42	39	35·5	0	6	5	0	NW 1	NW
	36	37	44	32	40	5	5	5	10	NW 2	NW
	28	30	32	34	30	10	10	10	0	NW 0	NE
	33	34	32	32	32·5	0	0	0	4	SE 0	SE
	33	36	41	34	37	10	10	2	2	NW 1	NW
	33	36	40	32	36·5	0	0	4	8	NW 0	NW
5	30	35	42	32	36	6	9	8	6	NW 3	NW
	32	35	38	38	35	0	6	0	2	SW 1	SW
	33	34	43	28	38	11	10	8	0	W 1	NW
	18	20	36	25	27	10	10	10	0	NW 1	NW
	20	24	39	33	29·5	0	10	10	10	NW 0	NW
	31	37	38	40	34·5	6	10	10	10	SW 1	W
	37	39	40	40	38·5	0	0	0	0	NE 0	NE
	36	38	39	37	37·5	0	0	0	0	NE 1	NE
	36	36	38	36	37	0	0	0	0	E 2	E
5	35	36	36	34	35·5	4	5	4	0	NE 1	NE
	34	38	46	40	40	10	10	10	0	NE 0	NE
	38·5	40	44	40	41·25	5	10	6	0	NW 2	NW
	42	40	40	40	41	0	0	0	0	SW 1	SW
2	38	38	36	34	37	0	0	0	0	NW 4	NW
5	34	36	38	38	36	0	4	8	0	NW 1	NW
	34	38	44	38	39	10	10	8	10	NW 1	W
	39	38	42	38	40·5	10	0	8	0	E 1	NE
	35	36	46	41	40·5	0	10	10	10	NE 2	NE
	38	39	42	37	40	10	8	0	0	SW 1	SW
	35	38	35	31	35	10	5	5	10	N 3	NW
	28	30	31	31	29·5	10	10	10	10	NW 4	NW
	30	34	34	30	32	10	10	6	10	NW 4	NW
09	32·93	34·97	39·32	35·00	36·12	4·51	5·74	5·32	4·13		

CAL REGISTER.

f Barometer above low water, about twenty-five feet. Kept by JOSEPH P. RUSSELL, M. D., Medical Staff, U. S. A.

WIND.				CLOUDS.				WET BULB.		RAIN.			HYGROMETER, at 3 P.M.		REMARKS.
se.	9 A. M.	3 P. M.	9 P. M.	Sunrise.	9 A. M.	3 P. M.	9 P. M	Sunrise.	3 P. M.	Began.	Ended.	Quantity	Hygrometer.	Thermometer.	
								Fahr.	Fahr.			Inches.	Fahr.	Fahr.	
1	NE 1	NE 1	NE 1	0	0	0	0	30°	31°	8 A. M.	3 P. M.	·04	26°	35°	
1	NW 0	NW 1	NW 0	0	0	NW 3	0	32	40				28	44	
0	NW 1	NW 1	NW 0	0	0	0	0	31	40				25	43	
1	NW 1	SW 0	SW 0	0	0	SW 2	0	30	40				24	44	
2	NW 6	NW 7	NW 2	NW 3	NW 4	NW 2	0	33	38				20	43	
0	NE 0	SE 3	SE 0	0	0	0	0	29	32	8 P. M.			15	32	
0	SE 0	SE 1	SW 1	0	0	0	0	33	33		9½ A.M.	·72	30	34	Snow.
1	NW 2	NW 2	NW 1	0	0	0	0	32	36			·03	28	42	Snow during the night.
0	NW 1	NW 4	NW 3	0	0	NW 4	NW 2	32	36				21	41	
3	NW 2	NW 1	NW 1	NW 4	NW 2	0	0	31	44				21	42	
1	SW 1	NE 0	NW 0	0	0	0	0	30	37	5 P. M.	6 P. M.	·01	24	40	
1	NW 0	NW 3	NW 5	W 3	0	NW 2	0	31	36				23	44	Very high wind during the night.
1	NW 1	NW 1	NW 0	0	0	0	0	22	26				15	37	
0	NW 1	NW 2	NW 0	0	0	0	0	21	32				20	39	
1	W 0	NW 0	SE 0	0	0	0	0	28	39				24	38	
0	NE 1	NW 1	NW 1	0	0	0	0	36	40		5 P. M.	·15	38	41	Began in the course of the night of the 15th
1	NE 1	NW 1	NW 1	0	0	0	0	32	37			·30	36	38	During the night.
2	E 1	SE 0	NE 2	0	0	0	0	34	37				38	38	Dense fog.
1	NE 1	NE 1	NE 1	0	0	0	0	32	34				30	36	
0	NE 2	NE 1	NE 2	0	0	0	0	33	38				36	47	
2	NW 0	SW 1	S 1	NW 4	0	0	0	38	42				35	44	
1	SW 1	SW 1	SW 1	0	0	0	0	36	41	4½ A.M.			38	40	
4	NW 2	NW 2	NW 1	0	0	0	0	37	35		9 A. M.	·86	38	37	Including ·05 of snow.
1	NW 1	NW 0	NW 0	0	NW 2	NW 2	0	33	37				35	39	
1	W 1	W 1	W 0	0	0	0	0	31	40				35	44	
1	NE 1	E 1	SE 0	0	0	0	0	38	40	7 P. M.			37	43	High wind during the night.
2	NE 4	NW 2	NW 1	0	0	0	0	38	43		6½ A.M.	.90	38	46	
1	SW 1	SW 0	SW 0	0	0	0	0	36	37	3 P. M.			40	42	
3	NW 2	NW 6	NW 5	0	NW 4	NW 5	0	32	33			.33	34	35	Ended during the night.
4	NW 4	NW 6	NW 7	0	0	0	0	28	29				30	32	
4	NW 4	NW 4	NW 3	0	0	NW 5	0	28	31				31	34	
								31·84	36·58			3.34	29·46	40·13	

METEOROLO

STATION, Fort Columbus, New York Harbor. Latitude, 40° 42′ North. Longitude, 74° 9′ West. Altitud

1844.	BAROMETER.				THERMOMETER ATTACHED.				THERMOMETER DETACHED.					CLEARNESS OF THE SKY.				
January	Sunrise.	9 A. M.	3 P. M.	9 P. M.	Sunrise.	9 A. M.	3 P. M.	9 P. M.	Sunrise.	9 A. M.	3 P. M.	9 P. M.	Daily Mean.	Sunrise.	9 A. M.	3 P. M.	9 P. M.	S
	Fahr.	Fahr.	Fahr.	Fahr.	Centi-grade.	Centi-grade.	Centi-grade.	Centi-grade.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.					
1	29·96	30·03	30·11	30·10	— 3°	0·5°	5°	1°	28°	30°	35°	32°	31·5°	5	10	10	10	
2	30·11	30·11	30·10	30·08	— 1	7	5	5	29	40	36	36	32·5	10	10	0	4	
3	29·91	29·88	29·60	29·50	3·5	5	5·5	4·5	38	42	42	38	40	0	0	0	6	
4	29·53	29·59	29·60	29·60	— 2	1	4	0·5	32	32	39	32	35·5	10	10	6	2	
5	30·06	29·94	29·99	29·99	— 2	2·5	4	— 3	26	27	30	26	28	10	2	8	8	
6	30·15	30·19	30·18	30·18	— 4	— 1	4	3·5	22	26·5	33	31	27·5	10	10	10	10	
7	30·10	30·10	29·88	29·85	— 1	1·5	3·5	3	32	37	38	37	35	0	0	11	6	
8	29·92	30·06	30·12	30·12	— 2	— 1·5	4	— 3	28	29	32	26	30	6	10	10	10	
9	30·20	30·23	30·11	29·96	— 7	— 5·5	4	2·5	18	21	24	26	21	10	0	0	0	
10	29·90	29·91	29·88	29·95	— 3	— 2·5	3	0	26	27	37	38	31·5	0	8	5	0	
11	30·29	30·31	30·40	30·42	— 7	— 6·5	—1	— 4	18	19	23	23	23	10	8	8	10	
12	30·38	30·34	30·13	29·92	— 8	— 6	—2·5	0	16	20	30	30	23	10	10	0	0	
13	29·40	29·40	29·40	29·56	1·5	2·5	4·5	1·5	34	36	40	34	37	0	0	0	8	
14	29·92	29·95	30·03	30·08	0	0·5	2·5	0·5	32	34	35	32	33·5	0	4	6	0	
15	30·12	30·12	30·14	30·20	— 3·5	— 2·5	—1·5	0·5	26	28	31	32	28·5	6	8	10	0	
16	30·03	29·95	29·79	29·77	1	1·5	3	3·5	34	36	35	38	34·5	0	0	0	0	
17	29·53	29·33	29·24	29·28	3	6	9	1·5	37	42	47	35	42	0	0	0	0	
18	29·54	29·72	29·79	29·84	0	0·5	1	0	30	32	35	32	32·5	10	0	4	0	
19	30·04	30·11	30·18	30·20	— 1	1	4	1	30	36	35	33	32·5	10	10	10	0	
20	30·20	30·27	30·28	30·28	— 6	— 5	—1	— 5	20	22	24	22	22	10	10	10	10	
21	30·28	30·28	30·28	30·23	— 9	— 7	—9	—10	8	12	16	14	13	0	0	0	0	
22	30·17	30·21	30·23	30·20	— 6	— 6	—2	— 4	14	21	24	17	19	0	4	10	0	
23	30·12	29·92	29·81	29·80	3	3	3	2·5	35	38	40	34	37·5	0	0	0	0	
24	29·76	29·73	29·73	29·73	0	1·5	8	3	30	32	41	34	35·5	6	10	10	10	
25	29·72	29·72	29·75	29·76	— 6	— 6	—4	— 8	18	18	18	12	18	0	0	10	10	
26	29·76	29·77	29·72	29·80	—12	— 9	—5	— 8	7	9.5	15	9	11	5	2	10	10	
27	29·92	30·00	30·11	30·14	—13	—11	—6·5	—11	3	5	10	5	6·5	8	10	10	10	
28	30·09	30·15	30·11	30·12	—15	—13	—8	—10	4	6	18	12	11	10	10	0	10	
29	30·14	30·15	30·08	30·08	—15	— 8	—7	—11	3	8	12	6	7·5	10	10	10	10	
30	30·12	30·10	30·08	30·03	—11	— 9	—7	—10	10	13	17	9	13·5	0	0	0	0	
31	29·99	30·00	30·04	30·04	—13	—12	—7	—10	5	9	18	14	11·5	10	10	10	10	
Monthly Mean	29·98	29·98	29·96	29·96	5·24	4·70	4·46	4·23	22·35	25·42	29·51	25·78	26·	5·35	5·35	5·51	5·00	

METEOROLOGIC

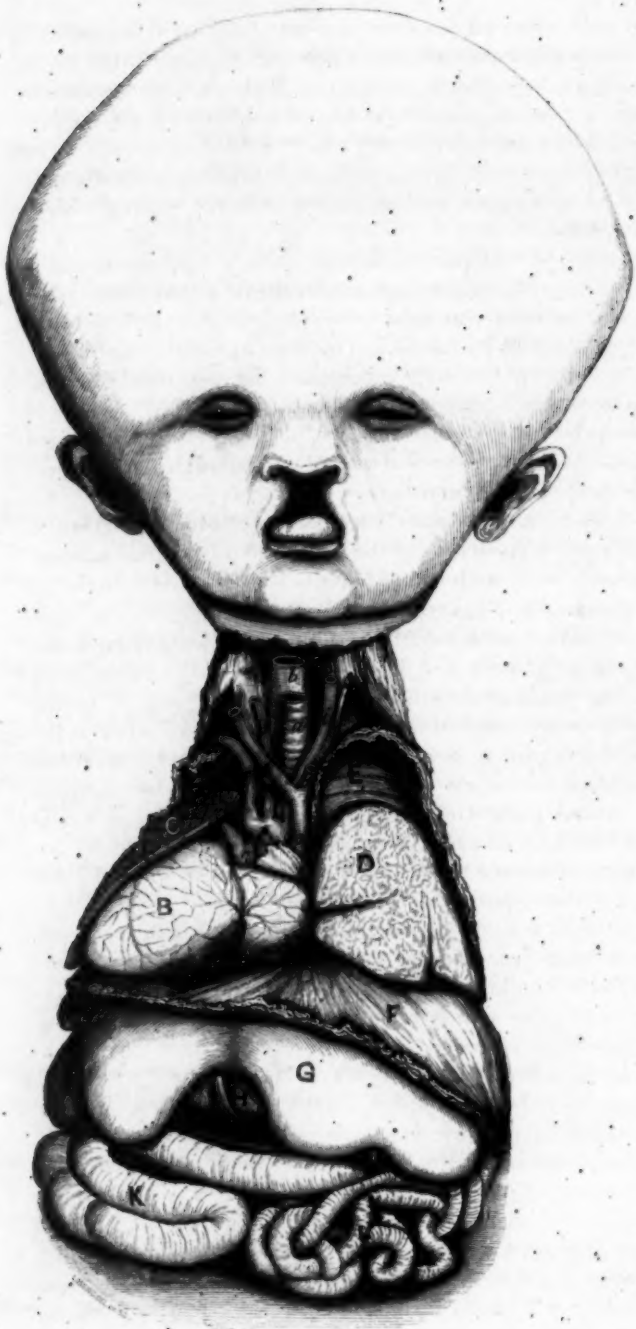
: Harbor. Latitude, 40° 42′ North. Longitude, 74° 9′ West. Altitude of Baro

ATTACHED.		THERMOMETER DETACHED.					CLEARNESS OF THE SKY.				W	
P. M.	9 P. M.	Sunrise.	9 A. M.	3 P. M.	9 P. M.	Daily Mean.	Sunrise.	9 A. M.	3 P. M.	9 P. M.	Sunrise.	9 A. M
Centi-grade.	Centi-grade.	Fahr.	Fahr.	Fahr.	Fahr.	Fahr.						
5°	1°	28°	30°	35°	32°	31·5°	5	10	10	10	NW 1	NW 0
5	5	29	40	36	36	32·5	10	10	0	4	NE 1	NE 1
5·5	4·5	38	42	42	38	40	0	0	0	6	E 1	E 2
4	0·5	32	32	39	32	35·5	10	10	6	2	NW 5	W 4
4	— 3	26	27	30	26	28	10	2	8	8	NW 5	NW 5
4	3·5	22	26·5	33	31	27·5	10	10	10	10	NW 2	NW 2
3·5	3	32	37	38	37	35	0	0	11	6	SW 1	SE 1
4	— 3	28	29	32	26	30	6	10	10	10	NW 4	NW 4
4	2·5	18	21	24	26	21	10	0	0	0	E 0	E 1
3	0	26	27	37	38	31·5	0	8	5	0	N 0	N 0
-1	— 4	18	19	28	23	23	10	8	8	10	NE 2	NE 1
-2·5	0	16	20	30	30	23	10	10	0	0	SE 0	SE 0
4·5	1·5	34	36	40	34	37	0	0	0	8	W 3	NW 4
2·5	0·5	32	34	35	32	33·5	0	4	6	0	N 0	N 1
-1·5	0·5	26	28	31	32	28·5	6	8	10	0	NE 1	NE 0
3	3·5	34	36	35	38	34·5	0	0	0	0	NE 2	NE 1
9	1·5	37	42	47	35	42	0	0	0	0	NE 0	NE 2
1	0	30	32	35	32	32·5	10	0	4	0	W 6	W 5
4	1	30	36	35	33	32·5	10	10	10	0	NW 3	NW 4
-1	— 5	20	22	24	22	22	10	10	10	10	N 1	N 2
-9	—10	8	12	16	14	12	0	0	0	0	NE 1	NE 0
-2	— 4	14	21	24	17	19	0	4	10	0	NE 0	N 0
3	2·5	35	38	40	34	37·5	0	0	0	0	SE 2	SE 5
8	3	30	32	41	34	35·5	6	10	10	10	SW 0	W 0
-4	— 8	18	18	18	12	18	0	0	10	10	NW 0	NW 3
-5	— 8	7	9.5	15	9	11	5	2	10	10	NW 1	NW 3
-6·5	—11	3	5	10	5	6·5	8	10	10	10	NW 2	NW 3
-8	—10	4	6	18	12	11	10	10	0	10	NE 0	NE 0
-7	—11	3	8	12	6	7·5	10	10	10	10	NE 1	NW 2
-7	—10	10	13	17	9	13·5	0	0	0	0	SE 1	E 1
-7	—10	5	9	18	14	11·5	10	10	10	10	NW 1	NW 2
4·46	4·23	22·35	25·42	29·51	25·78	26·	5·35	5·35	5·51	5·00		

ICAL REGISTER.

Barometer above low water, about twenty-five feet. Kept by JOSEPH P. RUSSELL, M. D., Medical Staff, U. S. A.

WIND.			CLOUDS.				WET BULB.		RAIN			HYGROMETER, at 3 P.M.		REMARKS.
9 A. M.	3 P. M.	9 P. M.	Sunrise.	9 A. M.	3 P. M.	9 P. M.	Sunrise.	3 P. M.	Began.	Ended.	Quantity	Hygrometer.	Thermometer.	
							Fahr.	Fahr.			Inches.	Fahr.	Fahr.	
NW 0	NW 1	NW 1	NW 3	0	0	0	27°	30°				26°	34°	
NE 1	NE 0	NE 0	0	0	0	0	26	36				30	36	
E 2	E 1	NE 6	0	0	0	NE 4	37	38			·75	44	42	Rain began and ended during the night.
W 4	NW 4	NW 6	0	0	NW 3	NW 5	30	37				34	39	
NW 5	NW 5	NW 5	0	0	0	0	35	30				20	30	
NW 2	NW 1	NW 1	0	0	0	0	20	30				18	32	
SE 1	W 1	NW 2	0	0	W 2	NW 4	30	36				20	38	Commenced blowing very high at ¼ to 12 M., equal to 7, ended at 1 P. M.
NW 4	NW 2	NW 2	NW 3	0	0	0	29	26				30	32	
E 1	E 1	NE 0	0	E 1	0	0	20	20	12 M.			25	24	Began to snow at 12M. Ended during night.
N 0	NW 1	NW 3	0	0	NW 3	0	23	35			·16	24	36	Snow measured in substance on the ground 24 hundreths.
NE 1	NW 1	NW 0	0	NE 1	NW 1	0	22	26				9	29	
SE 0	SE 1	SE 1	0	0	0	0	20	24	7½ P.M.			22	30	
NW 4	W 7	NW 6	W 1	NW 2	W 3	NW 4	34	36			·45	30	40	Ended in the night. Squally at 3 P. M.
N 1	NW 0	NW 0	0	0	0	NW 1	31	33				20	35	Commenced to blow a great storm at 5 P. M. and continued until 8 P. M.
NE 0	NE 0	NE 0	NE 3	NE 1	0	0	25	29				24	31	
NE 1	NE 1	NE 0	0	0	0	0	33	37	6 P. M.	4 P. M.	·40	22	35	Rain began in the course of the night.
NE 2	S 5	SW 9	0	0	0	0	36	46		4 P. M.	·70	42	47	Commenced suddenly to blow a hurricane at 12 M. ended in night. Barometical observation made at that time gave 29·42, Thermometer 44, Thermometer att'd. 7.
W 5	NW 5	W 7	0	0	NW 6	0	28	34				26	35	
NW 4	NW 1	NW 0	0	0	0	0	26	33				17	36	
N 2	N 1	NE 0	0	0	0	0	23	23				15	25	
NE 0	NE 0	NE 0	0	0	0	0	10	18	2½ P.M.	6 P. M.		10	17	Slight snow—inappreciable.
N 0	NE 1	N 0	0	0	0	0	13	20				16	24	Commenced to rain in the course of the night and ended in sleet. Dense fog began at 3 P. M. ended at 6 P. M.
SE 5	SW 0	W 0	0	0	0	0	36	38		2½ P. M.	·20	37	40	
W 0	W 0	W 0	0	0	0	0	28	38				28	41	
NW 3	NW 0	NW 4	0	0	0	0	17	19				9	18	
NW 3	NW 3	NW 5	0	NW 2	0	0	9	14				5	15	Large fields of ice in the bay generally. Buttermilk or Long Island channel closed—people crossing on the ice.
NW 3	NW 2	NW 0	NW 2	0	0	0	10	13				0	10	
NE 0	NE 3	NE 2	0	0	0	0	5	20				5	17	
NW 2	NW 5	NW 4	0	0	0	0	12	14				0	13	
E 1	NE 0	NW 3	0	0	0	0	10	15				5	17	Slight snow in the course of the day—inappreciable.
NW 2	NW 4	NW 2	0	0	0	0	8	14				0	18	
							23·	27·80			2·66	20·	29·55	



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TO READERS, CORRESPONDENTS, ETC.

☞ *To the Editors of Foreign Medical Journals*:—Having sent regularly, during the past year, our Journal to various medical editors in London, Paris, Edinburgh, Dublin, and Hamburg, and as most of these have done us the honor of making repeated extracts from our pages, we would take the liberty of asking the attention of those who have not yet transmitted their own Journal *in exchange*, to this (to us) not unimportant subject. These should be directed to the care of Wiley & Putnam, London.

A regular advertising sheet will be hereafter attached to the Journal; and as this belongs to its business department, all communications relative to it should be made to the publisher. The terms are cash in advance.

Contributions have been received from Drs. Le Conte, Delamater, and Stevens.

We have to acknowledge the receipt of the following works:

A Complete Condensed Practical Treatise on Ophthalmic Medicine. By Edward Octavius Hocken, M.D., Physician to the Blenheim street Infirmary, etc. London: 1844. 12mo., pp. 10×. Part I. The work is to be completed in three parts.

The Cyclopædia of Practical Medicine. Edited by John Forbes, M.D., F.R.S., Alexander Tweedie, M.D., F.R.S., and John Connelly, M.D. Revised, with additions, by Robley Dunglison, M.D. Philadelphia: Lea & Blanchard. 1844. Parts I. and II. (From the publishers.)

An Essay on the Blood in Disease. By G. Andral, Prof., etc. Translated from the French by J. F. Meigs, M.D., and Alfred Stillé, M.D. Philadelphia: Lea & Blanchard. 1844. (From the publishers.)

Two Years' Experience in the Employment of Magneto-Electricity, as a remedial Agent in Disease. By Dr. Nelson Wa.kly.

Transactions of the New York State Medical Society. (From T. Romeyn Beck, M.D.)

Address on Insanity, before the New York State Medical Society. By Samuel White, M.D., President of the Society. (From the author, and from T. Romeyn Beck, M.D.)

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The Contagiousness of Puerperal Fever. By Oliver W. Holmes, M.D. (From the author.)

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